The Learning Assistance Review

The Journal of the National College Learning Center Association

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About *The Learning Assistance Review*

The Learning Assistance Review, an official publication of the National College Learning Center Association (NCLCA), is published by the University of Minnesota. 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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Letter from the Editors

We can hardly believe that 3 years have passed. We remember writing the first letter from the editors thanking Martha Casazza (1995-2003) and Nancy Bornstein (1996-2003) for their many years of service. Now it is time for us to pass the "editorial torch" to a new team of learning assistance advocates under the direction of Christine E. Reichert of Lourdes College. We know that *The Learning Assistance Review* (TLAR) is in good hands. It has been our pleasure to serve the membership of the National College Learning Center Association (NCLCA) these last 3 years. We are anxious to move on to new challenges but retain fond memories of working with the NCLCA community on this publication.

Only those who have served in the capacity of a volunteer editor of a professional organization's publication can really understand the depth of commitment and responsibility it takes to produce a bi-annual journal. The University of Minnesota through the General College and now the New College of Education and Human Development has contributed many resources assisting us in the production of TLAR. We thank the University for its support of NCLCA and learning assistance scholarship and publication. For an editor, a 3-year commitment has its advantages but also takes its tolls. It is a bittersweet threshold. The skills we have gained in the process of this journey will be used to continue our professional work contributing to the field of undergraduate education designed for student success.

One of the biggest gifts from the University of Minnesota to NCLCA, TLAR, and us has been the University's financial support of Emily Goff, the women who contributed so much to each and every issue of TLAR. As the General College was folded into the New College of Education and Human Development, Emily's role expanded beyond hours of pay just as her appointment as a graduate research assistant was cut from 50% to 25% time. Emily was already managing each stage of the publication from potential authors' first inquiry to the compilation of editorial changes on final manuscripts. Then we lost our technical support for formatting internal publications. Emily stepped in and mastered "In-Design" and added final formatting—preparing the final copy to hand to the printer—to her list of skills and contributions. Emily, we sing your praises. You complete the team; we will never be able to thank you enough. Emily has also contributed as an author and book reviewer to TLAR. It is hard to believe that she also has had a baby, served in the role of "Super Mom" for her family that expanded from three to four, took on a new half-time job as coordinator of a grant project, completed her doctoral course work, passed both written and oral comprehensive preliminary exams, and has been working on her dissertation during her 3-year term as associate editor. Again, thank you, Emily!

With this issue we bring NCLCA members three articles exploring implications for learning assistance and student retention, a "Join the Conversation" that emanated

a sabbatical that was enriched at Diné College in Arizona, and a review of *How College Affects Students: A Third Decade of Research* by Pascarella and Terenzini. The first article in this issue, "Jeopardy Students' Attitudes Toward Preemptive Schedule Changes and Their Impact on Grade Point Average" by Kathleen Hartman and Brian Wlazelek presents the results of an interesting research project that utilizes intrusive strategies to encourage students who are academically at risk after their first year of college. The project reregisters students for courses that were unsuccessfully attempted in the previous semester. The article presents a quasi-experimental research design measuring attitudinal and academics factors. The article stimulates thought on infusing and modeling student support behaviors important for success in college.

"Do High School Behaviors Set Up Developmental Education Students for Failure?" by Randy Moore describes self-defeating academic behaviors, links them with high school habits and practices, and presents his views on the gap between the academic culture in high school and postsecondary education. Whether or not we as readers may differ from the author's point of view, but this article presents a case and data to support the case. Attitudinal and academic factors related to academic goals and success are measured and analyzed. This article helps us think more clearly about the problem we must address in academic assistance if we are to increase the likelihood of success for our students.

The third article of this fall issue provides a summary of equitable accessibility for diverse populations through the implementation of Universal Design (UD), Universal Instructional Design (UID), and Universal Learning Support Design (ULSD) in postsecondary education. Learning assistance professionals are often asked to relate administrative or instructional practices to learning support. In "Universal Learning Support Design: Maximizing Learning Beyond the Classroom," Donald Opitz and Lydia Block take the principles of UD as they apply to education and relate them directly to the issues and concerns of learning assistance professionals. Learning support services are pivotal in universal accessibility for all students regardless of their physical, psychological, or cognitive challenges. This article provides a comprehensive structural model for learning assistance practitioners to use to meet the diverse needs of students.

If pondering the intersection of First Nation philosophy with college-level reading and study skill development peeks your interest you will enjoy "Navajo Educational Philosophy and the Teaching of College-Level Reading" by Gretchen Starks-Martin, this issue's "Join the Conversation." It is an interesting discussion relating the Navajo educational philosophy with reading and study skill development practices used in postsecondary education. Socio-cultural theory encourages educators to infuse cultural ideas, methods, and resources into their course content, practices, and evaluation methods. Starks-Martin demonstrates how this can be done within college reading and study skills development. We encourage you to "Join the Conversation" after you have read this article.

We end this issue with a review of Pascarella and Terenzini's *How College Affects Students: A Third Decade of Research.* How fitting. This second volume by Pascarella and Terenzini, which is reviewed by Emily Goff, summarizes a wealth of research

from important to all practitioners in postsecondary education. It presents research that seeks to quantify the outcomes of postsecondary education in a holistic way. What changes occur in students while we are busy teaching, assisting, and evaluating their progress? What is the value added attributed to a college education? This meta-analysis of research can expand our thinking beyond our services, our academic disciplines, and our measures of student success to the overall impact of higher education.

We are moving on to new roles and responsibilities in our profession, but we would like to encourage you to continue to support NCLCA, Christine Reichert, and *The Learning Assistance Review* through submission of manuscripts or book reviews, and though volunteer work as an editorial board member or guest reviewer. Membership in any professional organization includes service. If you are interested in serving in any capacity to support TLAR, please contact Christine Reichert via the NCLCA Web site, www.nclca.net. It has been a pleasure serving you. We hope that the spirit of volunteerism continues to thrive within NCLCA, and we wish Christine Reichert well as she steps forward as Editor. It is the journey that is important. Enjoy each step of the way!

Irene and Jeanne

Jeopardy Students' Attitudes Toward Preemptive Schedule Changes and Their Impact on Grade Point Average

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Abstract

This article presents an examination of academic "jeopardy" students' attitudes about preemptive changes made to their course schedules by advisors as part of a comprehensive academic support program, the percentage of students who kept the changes, and the grade point averages (GPAs) of students with preemptive changes and changes made with advisor consultation. Students, contacted during the semester after the changes were made, answered questions to elicit information on their attitudes about and responses to the changes. The students' GPAs were also analyzed. We discuss implications of these findings for academic advisors who work with jeopardy students, and provide suggestions for further research.

Student retention is an important concern on college campuses, and those students who find themselves in academic jeopardy are among the least likely to be retained. Students in academic jeopardy are those students who fall below the required grade point average (GPA) to remain in good academic standing at their respective colleges and universities and who may be in danger of being dismissed. Students find themselves in academic jeopardy for a number of reasons, including lack of interest or ability (Cruise, 2002) and financial or personal problems (Trombley, 2001). Regardless of the reasons students find themselves in jeopardy, they are frequently a focus of concern in higher education, and literature supports the positive outcomes of advising interventions for just such a population (Heerman & Maleki, 1994; Heisserer & Parette, 2002).

Rationale

Assisting all students who find themselves in academic jeopardy at an institution can be a challenge. This is especially difficult when there is a limited time in which to do so, a problem we faced as advisors in a busy advising center between the fall and spring semesters of the academic year. At our institution, a rural, public university of approximately 10,000 students, up to 1,000 students can find themselves in academic

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jeopardy at the end of a given semester. Between the fall and spring semesters, there are approximately 2 to 3 weeks in which to contact these students and advise them on strategies that will help them to raise their GPAs. Add to this the fact that students are not on campus at this time of year, and the problem is compounded. We knew we needed to look at strategies that would help us to reach the largest number of students possible in a short period of time.

Because of a liberal repeat policy on our campus (i.e., students can repeat any course for which they received a grade and the highest grade earned in the course calculates in the GPA), we have always encouraged our "jeopardy" students to repeat classes in which they received an F. Although we do this during regular advising sessions during the academic year, we are not able to meet with the large number of students placed on academic jeopardy between semesters when they are not on campus. This limitation led the advising center to implement what we call the "preemptive schedule change."

Background on the Preemptive Schedule Change Intervention

The preemptive schedule change component of the intervention program for students in academic jeopardy was developed in response to time constraints placed on the program by a decrease in the time available for personal contacts with students between regular semesters. The Supplemental Advising Program for Students in Academic Jeopardy is an intrusive, developmental advising and academic support program that operates throughout the academic year with a concentrated effort to advise students between regular semesters when a plan for schedule revision can be implemented without disruption of the students' participation in classes during the following semester. Typically, students are contacted by telephone for the purposes of reviewing academic performance and developing a plan to return to good academic standing. Repeating classes that were previously failed provides a mathematical advantage for students by replacing the lower grade in the calculation of the student's GPA. Although there are financial aid and other considerations, a student's plan for returning to good standing often includes repeating one or more courses. A reduction in the number of weeks between the fall and spring semesters, and limited staffing, coupled with the desire to contact all students in this population, required a revision of the intervention strategy. Because a large number of students were repeating previously failed courses, after consultation and in-house outcome data showed that this strategy had a consistent positive effect on academic performance (Wlazelek & Coulter, 1999), preemptive schedule changes were made for a subpopulation of students in jeopardy. This process allowed advisors to place students in the appropriate repeat courses sooner, before the courses closed.

Although at first glance this intervention may not appear to be a developmental advising intervention, it is indeed developmental and educational in that right after their first semester in college, struggling first-year students need quick and decisive intervention to make changes to their schedules while it is still possible. This approach also models for them the very action they themselves should be taking: repeating failed courses. It is a teaching moment in a period of crisis for these students, and the first step in an ongoing educational process the students go through as they repeat the classes and come to the center for advising, counseling, and academic support. Indeed, this

approach was implemented on our campus as part of a larger advising program, with students being fully informed of the changes by mail and being given an opportunity to call an advisor to revise their schedule or discuss why changes were made. The preemptive change letter gives the students the opportunity to reject the changes and ask for their original schedules back, or to discuss how they may be able to do better in the repeat courses. Whether or not they keep the preemptive changes, the students meet with advisors during the academic year to discuss strategies for returning to good academic standing and to take advantage of the academic support services that include counseling and tutoring.

In-house data demonstrated the value of having students repeat classes, but we were interested in the attitudes of the students about the changes made to their schedules and the process for making these changes. The literature shows that how students perceive their advising experience is linked to the effectiveness of the advising. Research has established the importance of student satisfaction as it relates to improved retention (Koseke & Koseke, 1991) and academic and personal achievement (Donohue & Wong, 1997; Pike, 1993). Likewise, the manner of presentation rather than just the information itself has been found to impact the success of any developmental advising intervention strategy (Molina & Abelman, 2000). A review of the literature, however, yielded no research on preemptive schedule changes for students in academic jeopardy or their satisfaction with this component of academic advising.

Method

This study examined the attitudes of students in academic jeopardy at a medium-sized, rural, public university toward changes made to their fall semester schedules during the summer. Changes were made during the fall semester so that students could repeat at least one F they received in a spring course. Although students are encouraged to repeat Ds in some cases, preemptive schedule changes are made only to repeat Fs. Although the preemptive schedule change originally came out of a lack of time between the fall and spring semesters, it has also been used between the spring and fall semesters, with more students having preemptive schedule changes made because of the increase in the number of weeks in which to do so, but also because of the difficulty in reaching students who are away from home or working in the summer and who do not return phone calls. This is why the current study focused on preemptive changes made between the spring and fall semesters. Participants were 65 undergraduate students in academic jeopardy. Students were identified for inclusion in the study because their fall 2004 schedules were changed by faculty advisors during the summer so that they could repeat courses they failed in the spring semester. These students were part of a larger group of students whose names appeared on a computer-generated list of all students in academic jeopardy or given notification at the conclusion of the spring semester. Students given notification are those who fall below a 2.0 GPA at the end of their first full-time semester at the university. Students below a 2.0 GPA at the end of their second full-time semester are considered to be in academic jeopardy.

Of the entire population of students in jeopardy after the spring semester, 119 were given preemptive schedule changes during the summer, and these 119 students were

first-year students with one or two semesters of course work who may not have known that they could repeat classes or did not realize yet the value of doing so. These changes were made by faculty advisors after an audit of the schedules and transcripts of students in academic jeopardy. Attempts were made to drop only general education courses that could be taken any semester and also to add the repeat course or courses that fit into the same time slots as the dropped courses. Changes also were made when students had registered for classes for which they had failed the prerequisite courses. After changes were made by the advisor, a letter was sent to the student explaining the changes, listing the courses dropped and added, and extending an offer to call the Advising Center to discuss the changes with an advisor. A copy of the student's new schedule was also sent.

During the fall, we attempted to contact all 119 students with preemptive schedule changes in order for them to complete a questionnaire (see Figure 1) over the phone. Of the 119 students, 29 students had withdrawn either before the start of or during the fall semester, prior to the commencement of the study. Of the 90 remaining students, the response rate was 72%, with 65 students who were reached and who agreed to answer the questionnaire. The remaining students could not be reached after repeated attempts. Identifying ourselves as Advising Center staff, we called the students and explained the nature of the study. If the students agreed to answer the questions, we recorded their responses on the questionnaire.

Preemptive Change Questionnaire (for phone interviews)

1. Were you aware that your schedule was changed over the summer by the Advising Center so that you could repeat at least one F during this semester?

2. When you found out that your schedule was changed so that you would repeat at least one F, how did you feel?

3. Do you understand why the changes were made?

4. Did you keep any or all of the changes? If so, why? If not, why not?

5. Do you think these schedule changes will help you improve your GPA?

6. Would you like to make any other comments?

Figure 1. Preemptive change questionnaire.

Because these preemptive changes were made for the students and then the students were sent a letter informing them of the change, it was important for us to assess the students' attitudes toward these changes in order to improve student satisfaction with the advising process, as well as to look at the impact such changes made to the students'

GPAs at the end of the semester for which the changes were made. We also looked at how many students kept any or all of the preemptive changes.

Results

Study participants were contacted by telephone and asked to respond to five questions that evaluated their experiences associated with preemptive schedule changes (see Figure 1). All participants were asked the same questions and responses were recorded verbatim on a questionnaire form. Results were then categorized and summarized for analysis. Participants included 36 men and 29 women from all colleges within the university: 24 Liberal Arts & Sciences, 6 College of Education, 2 Visual and Performing Arts, 13 College of Business, and 20 Undeclared.

Table 1 *Summary of Preemptive Schedule Change Survey*

Survey Question	Number of Respondents (n=65)	% of Sample
Awareness of preemptive change		
Aware of change	49	75.4
Unaware of change	16	24.6
Attitude toward schedule changes		
Positive	44	67.7
Negative	21	32.3
Understood purpose for changes		
Yes	61	93.8
No	4	6.2
Retained preemptive changes		
Yes	45	69.2
No	20*	30.8
Understood benefit of changes		
Yes	56	86.2
No	8	12.3
No Answer	1	1.5

* Out of the 20 students who did not retain the pre-emptive changes, only 13 were among those students who were aware that the changes had been made. Of the 49 students who were aware of the changes, only 26.5% did not keep them.

The first item addressed the student's awareness that a schedule change had been made. As described previously, letters were sent to students explaining the benefits of a schedule change and the actual change that was made. Results (see Table 1) revealed that 75.4% of participants reported being aware that a change was made to their fall schedule that involved repeating a class. Most students who indicated that they were aware of the change simply stated "yes." The few student comments included: "Yes, I received a letter in the mail" and "Yes, I was sent a letter and a new schedule." Approximately a quarter of the students contacted (24.6%) reported that they were not aware, at the time, that a preemptive change was made to their course schedule. Students who indicated that they were not aware of the changes shared comments:

> "No, I found out by looking online."
>
> "No, I found out when I got to school."
>
> "I found out right before I came back to school."
>
> "No, I do not remember getting any information or receiving a letter."

Question 2 was designed to elicit students' reactions to the preemptive schedules that were made (see Table 1). Of the students surveyed, 67.7% responded positively to the changes that were made for them, while 32.3% did not like that the changes we made for them. The positive and negative tallies were made by categorizing the students' comments as either positive or negative. Students explained why their reactions were positive:

> "I figured the Advising Center knew what they [*sic*] were doing."
>
> "I was perfectly fine because it relieved the stress of it since it was taken care of for me."
>
> "Since it was changed for the next semester, I am familiar with the topics, so it is a good time to repeat [the course]."
>
> "I was going to do it anyway, so this made it easier."
>
> "I was glad that I could make it up."
>
> "It was fine. It was better to get grades up. I am now getting Bs."

Other students explained why their reactions were negative:

> "I was mad. It did not give me a chance to do it at my own pace."
>
> "It made me feel that I was forced to take the class."
>
> "I didn't feel like I was ready to repeat the classes right away."

Question 3 (see Figure 1 and Table 1) yielded results that showed that the majority of the students understood why changes were made to their schedules by the Advising Center. Of the 65 students in the study, 93.8% reported that they understood why the changes were made, while only 6.2% said that they did not. While the majority of the students simply answered "yes" to this question, some students commented further:

> "Yes, I received an F and I understand how that affects my quality points."
>
> "Yes, I know it was done to improve my GPA."
>
> "Yes. You retake classes to raise your grades."
>
> "I did not understand at first, but then I thought about it and realized why."

All students who answered "no" did not add an explanation.

Question 4 (see Figure 1 and Table 1) addressed perceived benefits of preemptive schedule changes by asking students if they kept the changes that were made and why or why not. Survey results indicate that 69.2% of respondents retained the schedule changes that were made by Advising Center staff members. Students commented on their decisions:

> "I kept one change. I was going to take that course again, anyway."
>
> "Yes, I had been told by the Advising Center that the only way to get rid of an F was to take it over."

Fewer than one third (30.8%) of the students contacted reversed the changes that were made. Students explained that they changed their schedules for varied reasons:

> "No. I dropped the class to take it with a different professor."
>
> "No. I want to take the class over the summer, not on top of four other classes."
>
> "No. I did not keep the changes. I came in to talk to an advisor because I am thinking about changing my major."
>
> "No, because I did not feel like repeating these courses. I am leaving the university after this semester."

Question 5 (see Figure 1 and Table 1) was designed to determine if students thought that the preemptive changes made would have a positive impact on their GPA. Most students surveyed answered simply with a "yes" or "no." A majority of respondents (86.2%) reported that they thought the schedule revision made by the Advising Center would have a positive effect on their GPA.

"Yes, because I am doing a lot better in these classes."

"Yes, because of the attitude I have towards the classes."

"Yes, I am set to pass the class this time."

Approximately 12% of the students surveyed did not think that the changes made would improve their GPA:

"No. I have an LD and it is hard for me to pass the classes."

"I will only do better in one, but not the other one because of the professor."

"No. Class was too early."

One student did not answer the question.

Finally, question 6 (see Figure 1) gave students the opportunity to add any comments they wanted to make about the preemptive schedule changes:

"I didn't know about the jeopardy program until I got the letter."

"Teachers should offer group tutoring sessions for tough classes."

"I would recommend to other students that they repeat classes right away."

"Students should be contacted before the change is made."

"I think this is a really good program."

"This is a good idea. It gives students an extra opportunity."

"Ask before you make the change."

"I appreciate the help from the Advising Center."

"I don't want to take the class with the same professor."

"I want to be able to repeat when I know I can focus better."

Although the focus of the survey was on the attitudes students had concerning the preemptive intervention, the researchers also examined changes in GPA as a measure of academic performance for students who had preemptive changes (see Table 2). To compare students for whom preemptive changes were made with the regular population of students in academic jeopardy who made schedule changes in consultation with an advisor, a random sample of 65 students was selected from the group of students without preemptive changes. Table 2 presents the mean GPAs during the fall and spring for this student population and the mean GPA differences. Overall, a comparison of mean GPA changes from spring to fall for students with preemptive changes and

Table 2 *Differences in GPA by College*

	Mean GPA		Mean GPA Difference
	Spring	Fall	Spring to Fall
Preemptive Changes			
Visual/Performing Arts	1.86	1.54 (n = 2)	-.32
Education	1.71	2.08 (n = 6)	.37
Liberal Arts	1.43	1.54 (n = 24)	.11
Business	1.51	1.72 (n = 13)	.21
Undeclared	1.53	1.63 (n = 20)	.09
Regular Schedule Changes			
Visual/Performing Arts	1.59	1.69 (n = 13)	.10
Education	1.38	1.56 (n = 13)	.17
Liberal Arts	1.57	1.69 (n = 13)	.12
Business	1.70	1.81 (n = 13)	.11

students in academic jeopardy who repeated courses after speaking with an advisor revealed no statistically significant differences between the groups: $t(128) = -.53$, $p = .60$ (2-tailed).

On average, both groups of students showed improvements in GPA. For the preempt group, the mean increase was .13. For the regular schedule change group, the mean increase was .16. Table 2 presents information about GPA changes for the preemptive change group by college of enrollment. The preemptive change group in all colleges except Visual and Performing Arts demonstrated mean increases in GPA during the subsequent semester. Of note is that only two students were included in the preemptive change group for the College of Visual and Performing Arts. Although GPA changes differed by college of enrollment, a one-way analysis of variance failed to reveal a statistically significant difference: preemptive change group, $F(4, 60) = 1.04$, $p = .39$; regular change group, $F(4,60) = 2.13$, $p=.09$. The fact that there was no significant difference in GPAs between the two groups, with both groups showing improvement, indicates that preemptive changes can be just as valuable in assisting students in academic jeopardy as regular schedule changes made in consultation with an advisor. The preemptive schedule changes were largely accepted and understood, and had the positive impact on students' GPAs.

Discussion and Recommendations

When serving large numbers of students considered academically at risk, having limited time and resources to serve, preemptive schedule changes can be a beneficial part of a comprehensive, year-round advising and academic support program in which students learn, among other helpful strategies, the benefit of repeating courses. Such a program should be implemented on campuses after securing administrative support.

Results of this study show that students accepted and understood the preemptive changes and, in fact, benefited in terms of GPA at a level comparable to the jeopardy students who made changes in consultation with an advisor.

Finding and using alternative ways of reaching students in order for them to repeat courses is a recommendation to come out of these data. Students often do not take the initiative to repeat courses on their own, do not know how, or may not even know they can. Making changes for them, as one possible way for them to repeat courses, was found to be largely accepted and appreciated by the students in the study. Even though the students had the choice to alter their schedules after the preemptive changes were made, the majority of the students surveyed chose to retain the changes. Another positive outcome of such an approach is that students in academic jeopardy who may have been unaware of the support offered to them were made aware by such an initiative.

The data also suggest that students in this sample were aware that repeating classes can improve their grades, and, in fact, the majority of the students believed that repeating the classes they were given in the preemptive change would improve their GPAs. This finding may lead future researchers to look at how preemptive changes affect self-efficacy and performance. The fact that students with preemptive changes in this study did show improvement in their GPAs at the end of the semester is encouraging and warrants further study. The students with preemptive schedule changes can be followed to examine their actions in subsequent semesters to determine if they learned from the preemptive changes and made changes on their own when repeating classes was warranted. It would also be helpful to look at the GPAs to see if they improved over time, along with determining the number of students in the study who returned to good academic standing and whether they continue to use the repeat strategy on their own.

Conclusion

Students in academic jeopardy have the greatest need for contact with faculty and administrators on campus in order to be retained. Yet, many students in academic jeopardy do not seek help, or institutions may find it difficult to contact all students in academic jeopardy because of their sheer numbers on campus. When it is difficult to contact students by phone, or many students need to be contacted in a short period of time, an option advisors may have is the preemptive schedule change, provided they advise at institutions at which repeating classes is advantageous. It is important, however, to inform the students of the changes and give them the opportunity to alter their schedules. This requires the most up-to-date student contact information possible. If current contact information is not available, the preemptive change may not be the best approach. Although the participants in this study were limited in number and enrolled at one campus alone, the research findings are encouraging for advisors in terms of taking such an intrusive approach as part of a comprehensive, developmental advising and academic support program, both in terms of students' attitudes and improved GPAs. When students understand why advisors make the changes, feel positive about the changes, understand that the changes will improve their academic standing, and show improvement in their GPAs, then such an approach is certainly one that can benefit students in academic jeopardy. Such an approach, which at first is implemented

in a moment of crisis for students at risk, becomes part of a valuable learning experience for the students and the first step in students receiving advising and academic support to lead them to academic success.

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Do High School Behaviors Set Up Developmental Education Students for Failure?

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Abstract

Most developmental education students functioned well in the academic culture of high school; on average, their high school grade point averages (GPAs) exceeded 3.0, and all of the students met or exceeded the academic requirements for graduation. However, at college many developmental education students have academic problems, and only about one third of these students graduate from the college in which they first enrolled. Many of the academic problems encountered by developmental education students at college result from an academic "culture shock" in college that selects against the behaviors that may have been rewarded or inconsequential in high school. These results are discussed relative to what instructors and learning assistance professionals can do to help developmental education students succeed in college.

One of the major goals of most high schools is to prepare students for college. Schools that maintain high academic standards are especially good at this because the academic rigor of high school courses is the most important factor for collegiate success (Cohen, 2006; Hoover, 2006; Rumberger, 2001). In demanding high school environments, students are more likely to develop the skills, attitudes, and academic behaviors they will need to succeed in college (Boylan, Bonham, & White, 1999; Cohen). However, despite decades of educational reform and a variety of state educational standards that claim to prepare students for college, increasing numbers of high school graduates are not prepared for the academic challenges of college (Cavanagh, 2004). For example, one third of high school graduates who attend college must take remedial courses at college to remedy their academic deficiencies (Wasley, 2006), only half of college-bound students meet the ACT's college readiness benchmark in reading (Ferguson, 2006), and only about one third of 18-year-olds are even minimally prepared for college (Schouten, 2003). In all 50 states and the District of Columbia, students can earn a high school diploma without acquiring the knowledge and skills needed for success in college (Honawar, 2005). Although 48% of college freshmen had A averages in high school, more than one fourth at 4-year schools, and almost half at 2-year schools, never return for a second year of college (Farrell, 2005; Olson, 2005). Even Advanced Placement (AP) courses do not contribute substantially to students' success in college (Bradt, 2006; Marklein, 2006; Viadero, 2006).

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Students' lack of preparedness for college is widespread; for example, nearly one third of high school graduates in Nevada who get a college scholarship take remedial courses when they start college, more than 30% of college goers in Minnesota take at least one remedial course, 40% of college students in Georgia who earn Hope Scholarships lose the scholarships because of inadequate grades (ACT scores reveal much, 2006; Schouten, 2003), and many students with high school GPAs over 3.5 end up taking remedial courses in college (Rutti, 2000; Schouten). These observations have prompted Ohio governor Bob Taft, co-chair of the Achieve study titled Closing the Expectations Gap 2006 (Cohen, 2006), to conclude that "there is a huge gap between the skills and knowledge required for success in college and the work force, and the skills and knowledge of most of our high school graduates" (p. 28). Cynthia Schmeiser, ACT's Vice President for Development, summed up the situation this way: "American high school students are not ready for college" (Cavanagh, 2004, p. 5).

At college many unprepared students enroll in developmental education programs where, despite the availability of a variety of support programs, they often encounter academic problems. The most obvious and disappointing evidence of developmental education students' academic problems is their low graduation rate from college; on average, only about one third of developmental education students who enter college graduate from that college (Boylan, Bonham, & Bliss, 1994; Moore, 2002). These low graduation rates are not explained by transfers to other schools (Jansen, Wambach, & Franko, 2005a).

Many factors influence the academic success of developmental education students, including nonacademic factors (e.g., students' socioeconomic status), students' academic histories, and students' academic behaviors (Best & Gehring, 1993; Birnie-Lefcovitch, 2000; Choy, Horn, Nuñez, & Chen, 2000; Graham & Dallam, 1986; Hurtado & Carter, 1997; Milem & Berger, 1997; Wintre & Sugar, 2000; Woosley, 2003). Although studies of these factors have been informative, they have often overlooked a key component of academic success—namely, how the academic standards and reward systems of high school condition and mold students' academic expectations, behaviors, and outcomes in college. Are developmental education students' academic troubles in college due to a clash of diverse and disparate academic cultures, in which a high school culture that often overlooks or rewards poor academic choices clashes with a college culture that penalizes the same behaviors?

The purpose of this study was to determine how developmental education students' behaviors and performances in high school are associated with their academic expectations, behaviors, and performances in college. I wanted to answer several questions. For example, how did developmental education students perform in the academic culture of high school? How are students' academic experiences and outcomes in high school related to their academic choices and outcomes in college? When they get to college, do developmental education students have a realistic understanding of the academic challenges that await them and the academic behaviors they will need to succeed? And finally, what can instructors and learning assistance professionals do to address this problem?

Method

This study was conducted in the General College (GC) of the Twin Cities campus of the University of Minnesota. GC prepared developmental education students to transfer to one of the university's degree-granting colleges. Many students in GC were considered to be "at risk" for failure in college because they had lower high school grades, lower ACT scores, and—most importantly—lower graduation rates than most other students at the university. Unlike courses in many remedial and developmental education programs, courses in GC were content-rich, credit-bearing courses that count fully toward graduation from the university.

This study included 1,837 students enrolled in a traditional introductory biology course from 2002 to 2005. These students had an average ACT composite score of 19.8 (range = 11-31; for comparison, the non-GC University of Minnesota average is 25.1, and the national average is 20.9; ACT scores reveal much, 2006), an average high school rank of 57% (range = 1-99), an average age of 20 (range = 16-52), and a gender distribution of 49% female and 51% male. These students' racial and ethnic diversity was as follows: 17% African American, 2% American Indian, 16% Asian American, 4% Chicano/Latina, 58% Caucasian, and 3% other. I excluded students (a) who failed the biology course because of academic misconduct, and (b) whose records did not include high school GPAs. More information about this course and GC is provided elsewhere (Higbee, Lundell, & Arendale, 2005).

Students' GPAs, Graduation Rates, Attitudes, and Expectations

At the beginning of the first day of class in college, I administered a survey that asked students to agree with, disagree with, or not respond to the following statements:

1. High school prepared me well for the academic challenges of college.
2. I am confident that I will graduate from college within 5 years.
3. Classes in high school were challenging.
4. I will earn a(n) ___ in this course.
5. In high school I studied an average of ___ hours per night.

Students' responses were anonymous, optional, and tallied after final grades were submitted. I used institutional records to obtain students' high school grades, GPAs, and graduation percentiles.

Results

In their high school biology courses, 35% of the students in this study earned an A, 58% earned a B, and 7% earned a C; no student earned a D or F in high school biology. Students' overall high school GPA, as well as their high school biology GPA, was 3.3. Many of the students in this study never earned a grade lower than B in high school.

Responses to Survey Items

Approximately 96% of the students in the biology class completed the survey, and all of the respondents answered all of the questions. Students' responses to the survey questions are shown in Table 1. Almost half of the students studied less than one hour per night in high school, and only about one third (i.e., 34%) of the students claimed that their high school classes were challenging. Nevertheless, more than 80% of these students believed that high school prepared them well for the academic challenges of college (Table 1). Virtually all (i.e., 95%) students predicted they would earn an A or B in the college biology course, 5% predicted that they would earn a C, and none of the 1837 students predicted they would earn a D or F. Students' predicted GPA in the biology course was 3.5, and virtually all (i.e., 96%) the students believed they would graduate from college within 5 years.

Table 1 *Students' responses to statements on a first-day-of-classes survey*

Statement	% Agree
High school prepared me well for the academic challenges of college.	81
I am confident that I will graduate from college within five years.	95
Classes in high school were challenging.	34
In high school I studied an average of ____ hours per night.	
One or fewer	46
Two	43
Three or more	11
I will earn a(n) ____ in this course.	
A	51
B	44
C	5
D or F	0

N = 1,837

College Grades

Approximately 13% of students earned an A in the college biology course, 27% earned a B, 31% earned a C, and 29% earned a D or F. Students' cumulative GPA in the college biology course was 2.1. Their overall first-semester GPA was 2.7, their second-semester GPA was 2.5, and their first-year GPA was 2.6. There was a significant positive correlation between students' first-semester GPA and their second-semester

GPA (r [1837] = .54, $p < .01$), and between students' first-semester GPA and their first-year GPA (r [1837] = .85; $p < .001$). Most (57%) of the students who earned a first-semester GPA lower than 2.0 also earned a second-semester GPA lower than 2.0, and 70% of the students who earned a first-semester GPA lower than 2.0 were dismissed from the university after 1 year because their overall GPA was lower than 2.0. Students who made an A in their high school biology course had a final average of 75 + 2.4% in their college biology course, and those who made a B in high school biology had a final average of 74 + 2.6% in their college biology course. These grades were not significantly different.

Rates of Retention and Graduation

Each year approximately 18% of the developmental education students in GC were dismissed from the university because of poor grades (i.e., had a cumulative GPA < 2.0; Moore, 2004b). In recent years, the 6-year graduation rate of developmental education students in GC has ranged from 29% to 33%.

Discussion

Although the developmental education students in this study earned relatively high grades in high school (their collective overall GPA was near 3.3), only about one third of them claimed that they were challenged by their high school courses. That is, the students in this study earned relatively high grades in high school despite the fact that many of them were not challenged by their courses. The lack of an academically-challenging environment in high school has been reported by others. For example, a top reason why many students drop out of high school is that they claim to be bored (Cohen, 2006; Gewertz, 2006; Rumberger, 2001). This apparent lack of a challenging and engaging academic culture in high school corresponds with the fact that high school students study relatively little; for example, almost half (i.e., 46%) of the students in this study reported that they studied one or fewer hours per night. This lack of studying, which has been noted by others (Marklein, 2006; Young, 2002), is important because studying improves not just the mastery of the information at hand, but also encourages learning during leisure time, improves study habits and academic skills, and improves students' abilities to manage time, solve problems, and exert self-discipline, all of which are important for success in college (Alleman & Brophy, 1991; Johnson & Pontius, 1989; Warton, 2001; Zimmerman, Bonner, & Kovach, 1996). Many developmental education students studied relatively little in high school, and thereby missed an opportunity to develop skills important for success in college.

Although many of the students in this study claimed that they studied relatively little in high school and were not challenged, they nevertheless earned high grades. For example, students in this study had a mean GPA of 3.3 in their high school biology courses, a mean GPA of 3.4 in their high school mathematics classes, and an overall mean high school GPA of 3.3 (i.e., near the A-/B+ border). Similarly high high school GPAs, which have been reported elsewhere (Are high school grades inflated, 2006; Bartlett, 2003; High school grades, 2006; Rutti, 2000; Wankat & Lovell, 2002), support the finding that today's undergraduates have the highest high school grades on record (High school grades; Marklein, 2006; Toppo, 2005). These results indicate that,

despite being at risk for academic problems in college, many developmental education students earned high grades in high school. Many were honors students (Rutti).

Developmental education students' increasingly high grades in high school have been attributed to grade inflation, which is an increase in students' grades without an accompanying increase in their academic achievement (Bartlett, 2003; High school grades, 2006; Rutti, 2000; Wankat & Lovell, 2002). For example, in 1972 42% of students entering private universities and 25% of those going to public universities had A averages in high school. In 2003 70% of the former and 53% of the latter had such an average (Bartlett). In many high schools, cumulative GPAs of 4.4 to 4.8 (on a 4.0 scale) are common, more than half of the students are honors students, and an A student is average (Rutti). Students' higher high school grades are probably not due to students being smarter today than in past years because these students study less than previous generations of students, have the worst study habits on record, and have SAT and ACT scores that are lower than those of the past (Bartlett; High school grades; Honan, 1998; Marklein, 2006; Young, 2002). According to ACT, high school grades inflated 12.5% between 1991 and 2003 (Are high school grades inflated, 2006).

This grade inflation has transformed high school grades into questionable measures of students' preparedness for college. For example, if high school grades are meaningful indicators of developmental education students' preparedness for college, then one would expect to find a strong association between students' high school grades and their college grades. This is not found. For example,

1. Students who earned an A or B in high school biology earned indistinguishable grades in their college biology course.

2. The mean high school math and science grades of developmental education students who graduate from college are not significantly different from those who drop out of college—all are near 3.4 (Jansen, Wambach, & Franko, 2005b).

3. Developmental education students' high school rank is not a significant predictor of their retention at, or graduation from, college (Connor, Franko, & Wambach, 2005).

These observations indicate that academic standards of many high schools are inadequate for preparing students for college; even the developmental education students who are highly at risk for failure in college earned high grades in high school.

Clearly, developmental education students functioned well in the academic culture of high school; they earned high GPAs and met or exceeded all of the state graduation requirements for high school graduation (e.g., they passed the required courses and assessment tests in science, mathematics, and humanities that purportedly prepared them for college). Although some other students earned even higher grades, developmental education students earned high grades in high school, even in the mathematics and science courses in which they often had negative experiences (Congos, Langsam, & Schoeps, 1997; Jansen, Wambach, & Franko, 2005b). In light of these high grades, it is not surprising that most developmental education students (a) believe

that the same behaviors that produced their high grades in high school will produce similarly high grades in college (Table 1; Toppo, 2005), and (b) are exceedingly confident that they will succeed in, and graduate from, college (Table 1). For example, 95% of the developmental education students in this study believed they will graduate from college within 5 years. And although they earned high grades in high school, developmental education students predicted that they would earn even higher grades in college. For example, students in this study had a mean GPA of 3.3 in their high school biology courses, and predicted that they would earn a mean GPA of 3.5 in their college biology course.

In one sense, students' confidence about their academic preparation and future is good; after all, we do not want students to start the semester believing that they will fail our courses. However, high high school grades lull many developmental education students into a false sense of academic preparedness; as Dembo and Seli (2004) have noted, "Overconfident students lack the ability to judge the academic situation as different from high school and hold on to the faulty belief that they have the necessary study strategies, when new ones in fact are needed" (p. 4). Clearly, most developmental education students do not know that they are unprepared for college; they have never seen, been told, or been shown that their academic behaviors are inadequate for college, and, as a result, cannot be expected to change these behaviors (Prochaska & Prochaska, 1999). In fact, they have evidence to the contrary; their academic behaviors enabled most developmental education students to earn high grades in high school and be admitted to college (Dembo & Seli). In college, however, these behaviors are often inadequate, and many students' academic outcomes fall far short of their predicted outcomes. For example, students' mean GPA of 2.1 in the college biology course studied here is far lower than their mean high school biology GPA (3.3), their mean overall high school GPA (3.3), and their mean predicted college biology GPA (3.5).

The problem here is not merely, as Cohen (2006) has noted recently, that the "American high school diploma has lost its currency" (p. 28). Equally problematic is the fact that the high high school grades of many developmental education students produce unrealistic expectations and exceedingly high levels of confidence, thereby prompting many developmental education students to conclude that the same behaviors that produced their high high school grades will produce similarly high grades in college (Toppo, 2005). When these students repeat their high school behaviors in college, they often earn poor grades. When faced with these poor grades, some developmental education students improve their academic behaviors and raise their grades. Although they know that their academic behaviors and work ethic are the most important determinants of their academic success (Moore, in press), others continue to make the same poor academic choices; they skip classes, ignore course-related opportunities for better grades, and do not participate in academic support programs (Dembo & Seli, 2004; Hattie, Biggs, & Purdie, 1996; Karanbenick & Knapp, 1988; Moore). This helps to explain why most developmental education students' grades have stable trajectories (i.e., do not improve between midterm and the end of the semester; Connor, Franko, & Wambach, 2005), as well as why their first-semester GPA is strongly correlated with their second-semester GPA and their chances of graduating from college (Moore,

2004b). These results are consistent with reports that academic behaviors, like other behaviors, can become automated by years of repeated and rewarded practice (Bargh & Chartrand, 1999; Wegner & Wheatley, 1999). In college, these behaviors produce sad results for many developmental education students; as Evans (2006) has noted, these students "are simply not engaged . . . they are dropouts who are still in school" (p. 37).

The Clash of Diverse Academic Cultures

I do not mean to place all blame for developmental education students' academic problems in college on precollege schools. On the contrary, college instructors, especially those in introductory courses such as the one studied here, can use a variety of pedagogical approaches to help developmental education students succeed (Higbee, Lundell, & Arendale, 2005). Nevertheless, the problem remains: because developmental education students functioned so well in the academic culture of high school, they have no way of knowing that they are at-risk for academic failure in college. However, they are at risk; two thirds will not graduate from the college in which they first enrolled (Boylan, Bonham, & Bliss, 1994; Moore, 2002). Many of the academic problems that produce these low graduation rates are due to an academic "culture shock," in which college students discover that the academic behaviors and choices that were inconsequential (or, in some instances, rewarded) in high school are penalized in college. For example, absenteeism is common in high school (Cohen, 2006; Fallis & Opotow, 2003; Rumberger), but it does not produce failing grades, even for students who miss most of their classes and drop out of school (Gewertz, 2006; Rumberger, 2001). For example, although 80% of high school dropouts did less than 1 hour of homework per day and missed most of their classes, almost 90% had passing grades when they quit school (Alexander, Enwisle, & Horsey, 1997; Bridgeland, Dilulio, & Morison, 2006). As several of these students noted, "They just let you pass" (Gewertz, p. 14). In college, however, these behaviors—that is, absenteeism and a lack of academic engagement—have serious consequences. Class attendance and course engagement are strong indicators of the academic success of developmental education students (Boylan, Bonham, & White, 1999; Launius, 1997; Moore, 2002, 2004a, in press; Moore, Jensen, Hatch, Duranczyk, Staats, & Koch, 2003); developmental education students who attend class regularly have significantly higher probabilities of earning higher grades than do students who skip classes (Moore, 2004a). These results document a "disconnect" between the academic culture of high school and that of college—namely, that the poor academic behaviors that forecast academic problems in college do not produce academic problems in high school; on the contrary, they produce mostly As and Bs. Although many "traditional" college students have experiences and skills that allow them to recover after missing some classes, developmental education students have no such "academic cushion." Developmental education students need as much instructional time as possible, and when they miss class and class-related events, their academic deficiencies are often exposed (Boylan, Bonham, & White; McMullin & Young, 1994; Moore, in press). This is why the grades and academic standing of developmental education students are especially affected by even small amounts of academic disengagement (Boylan, Bonham, & White).

Developmental education students' disengagement is expressed most commonly and explicitly by poor attendance, not just in class, but also at help sessions, summer orientation programs, and in academic support programs (Bridgeland, Dilulio, & Morison, 2006; Karabenick & Knapp, 1988; Moore, in press; Rumberger, 2001). Indeed, on any given day, 25% to 33% of students miss class, even in classes taught by award-winning instructors (Friedman, Rodriguez, & McComb, 2001; Launius, 1997; Moore, 2004a, 2004b; Romer, 1993). In most instances, this absenteeism results from choices that students make between their academic needs and their leisure activities, and not from work or family demands (Devadoss & Foltz, 1996; Friedman, Rodriguez, & McComb, 2001).

Research into Practice

Although it is difficult for instructors to reach all students, the following recommendations can help instructors reach more students:

1. On the first day of class, grab students' attention with quantitative data showing the students' probable academic outcomes. For example, use data from previous semesters to show the probable grade distribution in a particular course, as well as the academic behaviors that produced good versus poor grades (e.g., correlations with attendance, participation, completion of homework assignments). Similarly, use institutional data to demonstrate students' long-term success (e.g., their graduation rates). Although virtually all students have heard truisms such as, "It is important for you to come to class" (Moore, 2004a), few have seen quantitative measures of the consequences of their academic choices. These data can be extremely useful for encouraging student success while still presenting a realistic picture of the academic challenges that await them.

2. On the first day of class, have students write a short essay analyzing the quantitative data you have given them. This essay forces students to confront the academic realities of college, and many students will long remember the message.

3. Regularly emphasize the benefits of hard work and good academic choices. For example, regularly emphasize the benefits of behaviors that improve their grades and understanding of the course material (Moore, 2004a).

4. Be proactive; begin discussions of the importance of good academic behaviors on the first day of classes. By the time demonstrable problems arise (e.g., after the first exam), students are already at a major disadvantage and their behaviors are more difficult to change.

In addition to these recommendations, learning assistance professionals can also reach students by doing the following:

1. Emphasize that all students can succeed, but that their success depends greatly on their academic choices and work ethic. Many students do not know and have no reason to know that the academic behaviors that often produced success in high school will not produce adequate results in college.

2. Offer time-management workshops that focus on students' need to attend class, study outside of class, and take advantage of course-related opportunities such as help sessions.

3. Remind students that they are expected to dedicate at least 2 hours of work outside the classroom for every hour of work in class. At many colleges and universities this is not merely a suggestion; it is the basis for how credits are assigned to a course.

4. Remind students of support services that are available. These services may include learning communities, help centers, and programs such as Supplemental Instruction and Commanding English. These services often help students who are motivated enough to participate (Moore & Christensen, 2005; Moore & LeDee, in press).

Although these recommendations can improve the behaviors and grades of some developmental education students (Moore, 2004a), other students—that is, those who disengage themselves from their education by skipping classes and course-related activities—are exceedingly difficult to reach, for they do not participate in the academic programs that are designed to help them (Bridgeland, Dilulio, & Morison, 2006; Karabenick & Knapp, 1988; Moore, in press; Rumberger, 2001). These students' will have a very difficult time succeeding in college if their work ethic does not change. As noted recently by Welsh (2006), "Politicians and education bureaucrats can talk all they want about reform, but until the work ethic of U.S. students changes, until they are willing to put in the time and effort to master the subjects, little will change" (p. 11A).

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Universal Learning Support Design: Maximizing Learning beyond the Classroom

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Abstract

The movement for adapting Universal Design (UD), a concept from architecture, to higher education has yielded guiding principles for implementing UD in classroom and online instruction. In order to address all of the environments on college campuses, members of the Pedagogy and Student Services for Institutional Transformation (PASS IT) Institute, which met recently in Minneapolis, identified the need to adapt UD principles to the administration of learning support services. In response to this need, we propose 7 principles of Universal Learning Support Design (ULSD) that are distinct from—and yet complement—principles of Universal Instructional Design (UID). In addition, we provide a definition of learning support, a rationale for ULSD, a strategy for implementation, and future directions for dissemination.

Originally developed for use in architectural design, the principles of Universal Design (UD) have positively impacted postsecondary settings through the collaborative work of dedicated advocates. Adapting the seven principles articulated by the Center for Universal Design (CUD) at North Carolina State University under architect Ron Mace's leadership (Center for Universal Design, 1997), postsecondary educators now have useful sets of guidelines for implementing UD in instruction (Bowe, 2000; Burgstahler, 2002; Fox & Johnson, 2000; Scott, McGuire & Shaw, 2003; Silver, Bourke & Strehorn, 1998). The need now exists to adapt UD principles to the myriad campus services that support students' classroom and online learning. Scholars in Disability Services and related areas have already called attention to the leading role that student services can play in supporting the retention and academic achievement of students with disabilities (Block, 1993; English, 1993; Hall & Belch, 2000; Hart, Zafft & Zimbrich, 2001; Kroeger & Schuck, 1993; Weir, 2004). But, as Burgstahler (2005) has noted, "Few published articles have focused on accessible or universal design of student services" (p. 23). Despite this dearth in scholarship, student services often demonstrate UD "because they provide multiple means of facilitating the acquisition of knowledge" (Higbee & Eaton, 2003, p. 233).

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Training and dissemination projects such as the University of Washington's Disabilities, Opportunities, Internetworking, and Technology (DO-IT), University of Minnesota's Pedagogy and Student Services for Institutional Transformation (PASS IT), and DePaul University's Productive Learning Strategies (PLuS) have led recent efforts to translate UD in areas of learning support (DePaul University, 2006b; University of Minnesota, 2006; University of Washington, 2006; U.S. Department of Education, 2006). Yet practitioners and administrators still lack a clear statement of principles that parallel what is already available for instruction. To address this situation, in this article we offer seven principles of Universal Learning Support Design (ULSD) inspired by our discussions with participants of the first summer institute of PASS IT held at the University of Minnesota August 2-4, 2006.

We begin by offering a rationale for the need and then proceed to outline seven guiding principles inspired by the principles of Universal Instructional Design (UID). We will also define "learning support" and illustrate the range of programs, resources, and services that fall within its domain. We conclude with strategies for successful implementation in one key area of learning support, the campus learning center, and suggest further directions for this critical work.

Rationale

Mace (1988) and the Center for Universal Design (1997) at North Carolina State University have inspired three distinct adaptations of UD principles to instruction that are often cited in the higher education literature. Because the instructional principles provide clues for how UD may be adapted to learning support, it will first be useful to review the instructional adaptations of UD.

Concerned with assistive technologies, the Center for Applied Special Technology (CAST), a Massachusetts-based nonprofit organization, adopted three principles of Universal Design for Learning (UDL) that attend to three essential facets of learning (i.e., recognition, strategy, and affect) that are mapped to distinct brain networks (Rose, 2001; Rose & Meyer, 2000). These principles may be summarized as "multiple means of representation," "multiple means of support," and "multiple means of engagement" (Center for Applied Special Technology, 2006). Nearly simultaneously with CAST's development, two faculty teams, funded by grants from the U.S. Department of Education's Office of Postsecondary Education, developed new sets of principles by considering the relationship of UD to Chickering and Gamson's (1987) "seven principles for good practice in undergraduate education" (Fox & Johnson, 2000, p. 43; Fox, Hatfield & Collins, 2003, p. 26; Scott, McGuire & Shaw, 2003, pp. 374-376). One team, at the University of Connecticut's Center for Postsecondary Education and Disability, developed "Universal Design for Instruction" (UDI; Scott, McGuire & Shaw, 2001). UDI consists of nine principles—seven of which are the principles stated by CUD—with supplementary definitions and examples that clarify the relevance for instruction. Ultimately, a second team at University of Minnesota's Curriculum Transformation and Disability (CTAD) collaborative, developed eight principles of "Universal Instructional Design" (UID)—a term coined by Silver, Bourke, and Strehorn (1998)—that provide a truly original synthesis of CUD's principles and Chickering and Gamson's principles. In proposing UID principles, the CTAD members attempted

to make the relevance of UD to instruction easily applicable (see Figure 1). Among these three versions of principles, a fundamental theme persists: universally-designed instructional environments foster equitable and multimodal means by which students possessing the broadest range of characteristics can engage with instructors and curricular materials, and thus minimize barriers to students' learning. It is important to remember this fundamental commonality because the growing number of instructional adaptations of the principles of UD can seem confusing.

Although postsecondary educators have made significant headway in disseminating and implementing adaptations of UD principles in instruction, their focus on the classroom does not account for the entire range of students' college learning experiences and environments (Chism & Bickford, 2002; Keeling, 2004; Terenzini, Pascarella, & Blimling, 1996). Clearly, if we intend to minimize barriers and maximize students' access to learning more holistically, we must ensure that the wide range of learning support offices, programs and services also support UD principles. As in the case of instruction, practitioners can benefit from a set of guiding principles and strategies for implementation. Some have already used UD, UDI, and UID to guide their efforts, but we wonder whether lock-stock-and-barrel applications of architectural or instructional principles are sufficient or even appropriate for all areas of learning support. To take an example, instruction-specific language, like CTAD's second UID principle—"determine the essential components of the course" (Fox & Johnson, 2000, p. 43)—may not always translate to services like a learning commons dedicated to supporting students' self-directed study as opposed to achieving a course-specific learning outcome. Other UID principles bring similar challenges for their application to areas of learning support. Here we need to reconsider, then, the relevant principles that apply to the design of learning supports.

Seven Principles of Universal Learning Support Design (ULSD)

We must bear in mind that CUD's seven principles undergird all design considerations. Particularly where the resource is physical space, administrators and staff must, in our opinion, first attend to architectural design before other aspects. To return to our earlier example, the dominant feature of the learning commons—an innovative design integrating many traditionally distinct services—is its highly multipurpose space. Although staff members may be present to offer a variety of support and consultation, access to key learning resources is integrated into the commons' physical design: the layout of study carrels, tables, and computer workstations intended for various kinds of study activity and often self-service access to online resources and assistive technology. However, attention must then be given to nonphysical and ephemeral features of the commons like social interactions between students and staff, printed and online information, and administrative functions that take place behind the commons' public space.

In our discussion with colleagues at the PASS IT summer institute, we arrived at a set of principles that, for us, enhances the application of architectural and pedagogical concepts to learning support functions and environments. We developed these principles further by taking into consideration Blimling, Whitt, and Associates' (1999) principles of good practice in student affairs. We view these principles as "works

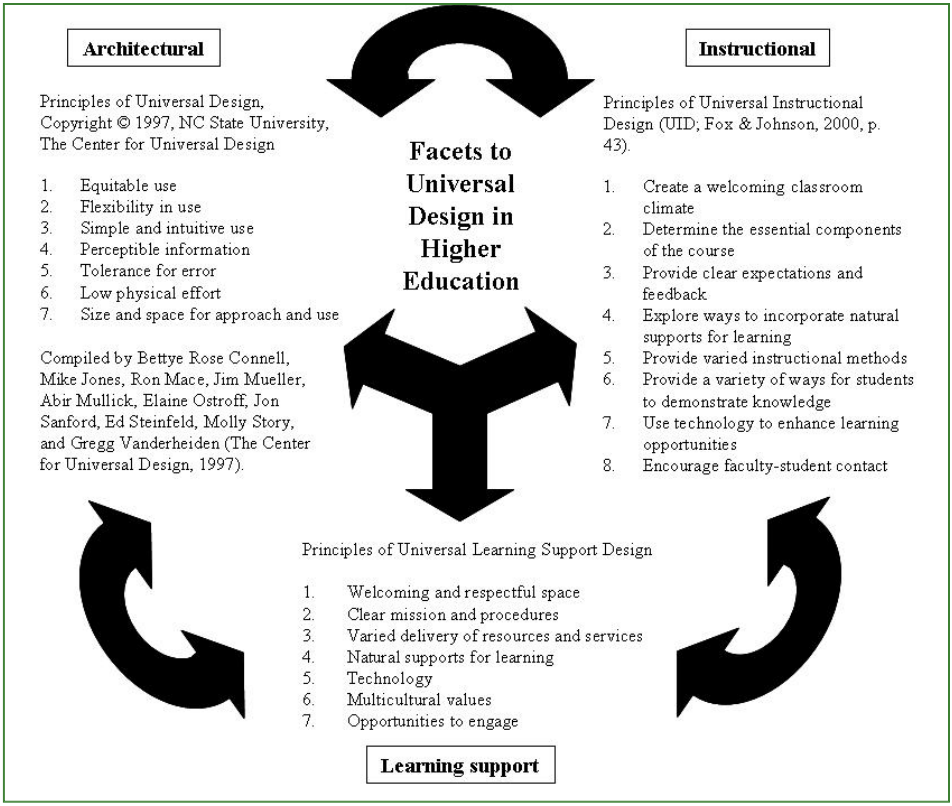

Figure 1. Diagram showing three sets of complementary principles of Universal Design, Universal Instructional Design, and Universal Learning Support Design. The application of the Principles of Universal Design, which were conceived and developed by the Center for Universal Design at North Carolina State University, to instruction and learning support does not constitute or imply acceptance or endorsement by the Center for Universal Design.

in progress" to be adapted in ways appropriate for the distinctiveness of individual programs and services (see Figure 1).

1. Welcoming and respectful space: Features of the spaces, resources, and services are welcoming, respectful, and comfortable to students having the widest range of characteristics and abilities. All representations of the spaces are welcoming and respectful.

2. Clear mission and procedures: The purpose of resources is clear and the procedures for their use are easy to follow regardless of the students' experience, knowledge, language skills, and abilities.

3. Varied delivery of resources and services: Varied, nonstigmatizing means

of delivering resources and services foster equitable and flexible use by students. Varied delivery meets the needs and interests of students having the widest range of experiences, characteristics, and abilities.

4. Natural supports for learning: Resources and services foster students' holistic learning and engagement in a developmental manner. Staff members are trained to accommodate the diverse learning styles of students. Services empower the students using them.

5. Technology: Technology resources enhance opportunities for all students to be engaged and learn. Technology assists in implementing other ULSD principles.

6. Multicultural values: All aspects of learning support embrace the broadest characteristics, backgrounds, and interests of students. Students' knowledge and experience are incorporated into design elements and improvements.

7. Opportunities to engage: Space, resources, and services promote students, regardless of their characteristics, to be engaged in learning. Positive interactions among students and staff are fostered by resources, services, and programming.

What Is "Learning Support"?

Now that we have proposed a set of guiding principles, to which spaces, programs, and activities do they apply? We intentionally designate the target of these principles as learning support. We believe that doing so avoids the artificial dichotomization of academic learning and student development and embraces the spirit of Keeling's (2004) holistic definition of transformative learning. We also escape pinning learning support services to a particular institutional division like student affairs or academic affairs, an important strategy amid the diversity of organizational homes that maintain the range of activities we have in mind. In essence, these activities include the many ways and many places in which instruction and student services can be coupled within and beyond classrooms. It is important to adopt a fluid definition as institutions increasingly embrace innovative, integrated, and holistic approaches to student learning, as learning communities demonstrate. Where instruction is concerned, UID should be considered in addition to ULSD.

We outline here nine broad areas of learning support and provide examples of the types of services that may be included within each area. This list is a beginning. In providing it we hope that student service professionals and administrators will recognize their particular programs and services and work to adopt ULSD at both the programmatic and institution-wide levels.

Core Administrative Services

Learning support can include the widest range of campus services that deal with the very logistics of being a student on campus: admissions, student records, financial aid, accounts receivable, registration, transcripts, and degree conferral. Indeed, if these core administrative services maximize students' sense of welcome, access, and engagement, they can only promote students' satisfaction, sense of belonging on campus, and,

ultimately, their academic achievement. Campus administrators are increasingly recognizing how simplifying their delivery of services positively impacts the quality of students' learning experience. Let's take two examples. The University of Minnesota, a large public institution, brought together registration, transcript, financial aid, and related services within a comprehensive "OneStop" identity having both online and on-site presences that reduces the bureaucracy in administering these services (University of Minnesota, 2005). Similarly, DePaul University, a large private institution, recently opened "DePaul Central" to carry out the mission: "Here, at DePaul Central, we promise to help you take care of the core administrative details (student records, financial aid, student accounts) so you can get on with your core business—learning at DePaul!" (DePaul University, 2006a).

Transition Programs and Services

Another growing trend in learning support often straddles the division between student affairs and academic affairs in efforts to promote students' successful transition to college life and expectations. First-year experience programming, for example, may include a variety of welcoming activities, summer bridge programs, orientation, convocation ceremonies, Web-based communities and portals, and freshman seminars. A growing recognition of transfer and adult students' unique needs has led to tailored services for these distinct cohorts. Institutions are also increasingly attending to student transitions within and beyond their degree programs. Sophomore seminars, upper-division seminars, weekly departmental colloquia, and learning communities all embody this trend.

Academic Skills Development

A panoply of programs and resources that focuses on developing students' academic skills constitutes another core area of learning support: subject-based tutoring, writing consultation, Supplemental Instruction, skills workshops, library workshops, testing and assessment, learning centers, printed and Web-based resources, professional clubs, leadership programs, and student research opportunities. Increasingly, institutions are approaching academic skills development in more integrated and holistic ways through across-the-curriculum approaches to writing and mathematics instruction, learning communities, and curricula that purposefully integrate skills development and content (Higbee, Lundell, & Arendale, 2005).

Career and Community Learning

Increasingly important for post-graduation survival, career and community learning programs provide students with opportunities and resources to connect their classroom learning to the "real world." These opportunities take on a wide variety of formats: career counseling and workshops; career centers; community and service learning centers; internship, cooperative, and "externship" programs; volunteer placement; teaching and research apprenticeships; and graduate school preparation workshops. In the context of adult, neighborhood-based, and online degree programs, career and community learning may also occur through satellite campus programs and resources located within students' own workplaces and communities.

Engagement, Social Community and Living

Regardless of whether students live on campus, commute, or learn online, and regardless of students' abilities, research has demonstrated that a sense of connection to campus on both academic and social levels is critical to student retention (Astin, 1993; English, 1993; National Survey of Student Engagement, 2006; Tinto, 1993). In response to national recognition of this fact, universities have instituted offices and centers devoted to student engagement. Other significant providers and partners in this work are residential life offices and the wide array of student communities, cultural centers, and organizations often supported by student affairs personnel.

Health and Recreation

By promoting students' physical, emotional, and spiritual health, campus health services, crisis centers, counseling services, and ministry offices constitute a further closely-related set of learning supports. In addition, intercollegiate and intramural sports, recreation centers, and recreational clubs all foster students' physical health and engagement.

Advising

Academic advising and a variety of other advising activities are critical supports to students' learning and development. Three predominant models for academic advising are (a) advising performed by a professionally-trained staff within distinct units; (b) advising performed by tenured and tenure-track faculty members; and (c) a blend of both—for example, advising that begins with a professional staff advisor and concludes with a faculty advisor or mentor. Other types of advising may include roles for peer mentors, student affairs personnel, research supervisors, and alumni.

Disability Services

Traditionally, campuses have had at least one staff member designated as the campus consultant for students with disabilities. Large universities may have a department of staff. Disability services can be housed in any number of campus divisions or offices. One place that disability expertise can be found with greater frequency is within a learning center, learning commons, or academic skills center. Emerging models of service provision situate disability services personnel as consultants to the entire campus and partners in efforts to implement UD strategies in settings for instruction and learning support (Block, 2006).

Holistic Learning Communities

A variety of offices and programs do not fall neatly into one or another category because of the comprehensiveness of their programming and resources and close partnerships with curriculum. Examples include some campus women's centers, multicultural centers, honors colleges, and living and learning communities.

Practitioners and administrators have the benefit of several excellent books that address the wide range of learning support services and programs highlighted here. They offer further guidance for the administration and development of these services and give some perspective on the importance of learning support work in the broader context of

higher education. See especially Barr, Desler, and Associates (2000); Blimling, Whitt, and Associates (1999); Kuh, Schuh, and Whitt (1991); and Sandeen and Barr (2006).

Strategies for Implementation

To illustrate how ULSD may be implemented within particular learning support services, we will focus on one common type of learning support: the learning center. We offer the following scenario as an impressionistic window for viewing how a universally-designed learning center might appear from a student's perspective. The scenario, although idealized, is inspired by a student's real experience at the University of Minnesota's Academic Resource Center, currently affiliated with the Department of Postsecondary Teaching and Learning (Opitz & Hartley, 2005).

A Model of ULSD-Based Practice

Katrina, a 28-year old transfer student who is blind, enrolled in a college algebra course needed as a prerequisite for upper-division courses in her major, international business. Although she liked math in elementary school, negative experiences in her high school algebra class dissuaded her from continuing her math study. Given her prior negative experiences, her 15-year break from math, and the disability accommodations she would need, she was worried about falling behind in the class and failing. Dan, her disability specialist, assured Katrina that all arrangements for her accommodations had been made, including advance electronic copies of lecture notes that were in a format compatible with her laptop's screen reader. But Dan also encouraged Katrina to take advantage of peer math tutoring available at her college's learning center. Fortunately, her math instructor took the class on a mini-field trip to the learning center, creating a natural opportunity for her to become acclimated to the space and services of the center. During this visit, Katrina learned that the center offered scheduled appointments with tutors and other helpful resources like wireless access to the Internet. She found the center's space easy to navigate and the student staff welcoming. The following week she returned to sign up for a weekly appointment with a tutor who was also a business major. A receptionist made the appointment and explained further resources available to her, including after-hours online tutoring and software on the center's computers that provided supplementary instruction and practice problems in an audio format. For the remainder of the semester, Katrina worked regularly with her assigned tutor, Cindy, with whom Katrina developed a good friendship. Sometimes she came with a student scribe, assigned by her disability specialist, but other times she simply dropped into the center to access the Internet, among other things, to download her class notes, or simply study. She especially liked the convenience and accessibility of the online tutoring, which she often used from home. She sometimes joined classmates at the center's study tables to review for exams. At the end of the semester, after her final, Katrina dropped by the center to share the news of her success—she got a B. She asked the tutors on duty for their perspective on the instructor teaching her next math class, business calculus.

We chose the perspective of a student with a physical disability, but many of the center's design features implied here would benefit all students regardless of their abilities. Particularly where math learning assistance is concerned, the learning center

must be welcoming and respectful so that students who already possess negative predispositions or "math anxiety" will feel comfortable. As in this scenario, centers can accommodate class visits to ensure that all students are introduced to the learning resources, a strategy that circumvents the intimidation students often feel when faced with making their initial visits alone. Design considerations for the physical space reinforce a sense of welcome and foster equitable access: bright lighting, sound absorbers like carpeting and acoustic ceiling tiles, wide aisles between tables to enable ease of movement, table heights and chairs that are suitable for the widest range of users, seating options that meet students' needs for individual or group study, a perceptible layout of resources, and a reception area. The center's mission, procedures, and policies are posted and made available in a variety of formats. Staff members explain procedures to newcomers and regularly monitor whether students are getting what they need during their visits. Specific resources and services are offered through a variety means. Here, tutoring is available online, on a drop-in basis, and by appointment. Individualized and group-study options exist. Ideally, the hours and places of service also vary by students' needs. Technology enhances this flexibility and students' opportunities to learn by offering interactive service online, ancillary learning software, and assistive technology. The space and staff promote group study and other opportunities for students to interact and be engaged in their learning. In on-going training and staff development opportunities, peer tutors learn about self-directed learning, developmental education, varied instructional approaches and learning styles, multicultural and disability issues, active listening, positive reinforcement, welcoming and respectful behavior—that is, strategies that provide natural supports for student learning. Multicultural values infuse all dimensions of the center: tutoring pedagogy, diversity of staff, interior design features, media and communications, and student-staff interactions. Based on student feedback and periodic program assessment, the design and administration of the center is further developed to ensure that all students' needs are being met and that their holistic learning is supported most effectively.

Many of these features may indeed already characterize much of learning center practice (Higbee & Eaton, 2003). ULSD provides a framework within which to name and assess such characteristics and to guide further program development. Checklists can help in the planning and assessment process (University of Washington, 2006).

Conclusion: Future Directions

We intend our conceptualization of ULSD, as presented in this article, to begin a conversation around issues of postsecondary learning that are intertwined with curriculum and extend beyond the classroom. A starting point is simply to identify a set of UD principles as they apply to learning support (i.e., ULSD), what constitutes learning support, and what a demonstration of ULSD may look like. We have offered the seven principles of Universal Learning Support Design as fluid guidelines that we hope others will interpret and develop in ways relevant to their own programs and institutions.

Moving forward, the need exists to further illustrate the applicability of these principles, share best practices, and assess the impact on student learning. To a certain degree, ULSD may very well be "just good practice" and therefore intrinsically rewarding to both practitioners and students who are engaged in holistic learning on campus.

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Join the Conversation
Navajo Educational Philosophy and the Teaching of College-Level Reading

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Abstract

Diné College in Tsaile, Arizona requires all new faculty to take a course on Navajo educational philosophy taught by a Navajo faculty member. The institution requires faculty to embed the Sa'ah Naagháí Bik'eh Hózhóón (SNBH) philosophy into their content, course curriculum, academic textbook, class assignments, and course assessment. This article discusses the SNBH philosophy as incorporated into the teaching of college-level reading at Diné College during the fall 2004 semester. A variety of learning techniques were adapted to teach the reading of textbook chapters and preparing for exams drawing on the SNBH philosophy and western cultural strategies.

As a way to encourage culturally-responsive teaching in the classroom, Diné College in Tsaile, Arizona requires all new faculty to take a course on Navajo educational philosophy taught by a Navajo faculty member. Culturally-responsive teaching focuses on teaching strategies that fit into the traditional cultural teaching pedagogy or philosophy (D. Washington, personal communication, September 13, 2005). Gay (2000) defined cultural responsive teaching as using the cultural knowledge, prior experiences, and learning styles of students to create a framework for curriculum. Gay stated, "These approaches to teaching are based on the assumption that positive self-concepts, knowledge of and pride in one's own ethnic identify, and improved academic achievement are interactional" (p. 30). The Diné Educational Philosophy (DEP 294) course thus requires instructors to embed the Sa'ah Naagháí Bik'eh Hózhóón (SNBH) philosophy into their content, course curriculum, academic textbook, class assignments, and course assessment. DEP 294 "Introduces faculty to SNBH teachings of the Diné [Navajo] knowledge and living systems. Relates them to curricula, pedagogy, and academic life in higher educational learning. Allows faculty to learn the basic Diné [Navajo] Educational Philosophy in using the traditional and Western curriculum to advance quality student learning" (*Diné College General Catalog,* 2004-2005, p. 49).

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This article discusses the SNBH philosophy as incorporated into the teaching of college-level reading at Diné College during the fall 2004 semester. Learning techniques were adapted to teach the reading of textbook chapters and preparing for exams. The reading techniques covered were: SQ3R (survey, question, read, recite, review) and SQ4R (survey, question, read, record, recite, review) for reading textbook chapters; PLAN (predict, locate, add, note) for reading comprehension; PRO approach (preview, read, organize) for reading comprehension; KWL approach (knowledge, what to learn, what was learned) for reading textbook chapters; and PLAE (preplan, list, activate, evaluate) for preparing for exams.

Sa'ah Naagháí Bik'eh Hózhóón Philosophy

SNBH is an overall approach to problem solving and planning in the Navajo culture. It is a way of thinking that permeates the culture, even in governmental decision-making (Maniaci, 2004). Mellow (2000) and McNeley (2002) defined the SNBH framework in an educational context as: Sa'ah–thinking and generating ideas; Naagháí –planning; Bik'eh –doing, implementing, or producing; and Hózhóón –reviewing and reflection. When all of these elements are brought to bear on a problem or plan, strength is the result; an informed decision or a successful outcome is assured (A. Lee, personal communication, October 10, 2004).

The writing process as taught by the English Department at Diné College is an example applying this philosophy (D. Toadlena, personal communication, September 4, 2004). When students write an essay, they first generate ideas (thinking), then they map what they want to write (plan). In the third step they draft an essay (implementation), and finally revise it (reviewing and reflecting). A poster with the four quadrants of SNBH and the writing process is displayed in the English classroom.

College Reading and the SNBH Philosophy

All students who enroll at Diné College are Navajo. Most speak the Navajo language as their first language. They are required to take a Navajo language class and a culture class. The class in Navajo culture covers their traditions, history, and philosophy. Therefore, students taking the college reading course are familiar with the SNBH approach and the reading course was thus patterned after their knowledge of this philosophical approach. SNBH was adapted to college reading techniques so that the students had a philosophical basis upon which to apply reading skills.

SQ3R and SQ4R for Reading a Textbook Chapter

The SQ3R and SQ4R approaches for reading a textbook chapter are prevalent in numerous study skills textbooks as methods for reading expository text. (Atkinson, & Longman, 2002; *Study skills and instructional method*s, n.d.; *Survey, question, read, review, recite, reflect,* 2005; TAMU Student Counseling Service, n.d.; University of Guelph, 2005; University of North Dakota, n.d.; West Virginia University-Parkersburg, n.d.; Wong, 2006). The SQ3R method involves five major steps (Pauk, 1974).

In the first step, students survey or preview the textbook chapter. They scan the title, list of objectives, headings, and subheadings. They peruse captions under pictures,

charts, graphs, or maps. They scan review questions, study guides, the summary, and glossary at the end of the chapter to try and get an overview of what the chapter is about. Students think about what they already know about the topics in the chapter. In Navajo philosophy, this is called thinking or Sa'ah.

In step 2, students question as they survey by turning the titles, headings, and subheadings into queries. They read the questions at the end of the chapter. They ask, "What do I already know about this subject?" and "What has the instructor said about this subject in lecture?" Students plan how they are going to approach the chapter based on how many questions they have to answer. They think about how long it will take them to read the entire chapter. In Navajo educational philosophy this is called planning or Naagháí.

Students then actually read the chapter in step 3, looking for the answers to the questions first raised. They reread captions under pictures and graphs. They reduce speed for difficult passages and reread sections that are not clear. They read a section at a time. In step 4, after each section, they recite by taking notes, underlining, highlighting, or summarizing. The reading and reciting of the chapter is the implementation, or Bik'eh in the Navajo educational philosophy.

After the read and recite steps, students complete step 5 by skimming back over their notes, underlining, or highlighting of the whole chapter. They are thus reviewing and reflecting on the information for retention of the material. Some students review immediately; some review later. The reviewing and reflection step is termed Hózhóón in the Navajo educational philosophy. The SQ4R approach is similar, but it adds one step (Wong, 2006, 185-188): (a) survey, (b) question, (c) read, (d) record. (e) recite, and (f) review.

PLAN for Reading a Textbook Chapter

PLAN is an acronym for a study-reading strategy with four distinct steps to assist students in comprehension and retention of academic text. The students use PLAN as an approach before, during, and after reading (Caverly, Mandeville, & Nicholson, 1995; Caverly, Nicholson, & Radcliffe, 2004; Spillane, n.d.).

In the first step, students predict the content of the textbook chapter by previewing titles, introductions, subtitles, boldfaced and italicized words, visual aids (e. g., pictures, graphs, charts), and summaries. They consider the reading task and the purpose for reading the textbook chapter. They then create a map or diagram of the ideas with the title of chapter as the center of the drawing. The thinking that goes into this step is the Sa'ah of the Navajo educational philosophy.

In the second step, students locate known and unknown information on the map by placing check marks next to known information and question marks next to unknown information. This step enables them to assess their prior knowledge of the chapter's topics. In this way they are in a sense planning their reading strategy, and this is called Naagháí in the Navajo educational philosophy.

Students engage in a close reading of the chapter and add new branches to their map where there are question marks. They confirm their checks on the map and revise

if necessary. This step is important for metacomprehension and content recall and application (Spillane, n.d.). This step also creates an active reading (implementation) of the material and is termed Bik'eh in the Navajo educational philosophy.

After reading, students consider or note what they now know by writing a summary, making a log entry, or reconstructing their maps. In this fourth step, they are reviewing their maps in preparation for assessment of the material. This is called Hózhóón or reviewing and reflection in the Navajo framework.

PRO Approach for Reading a Textbook Chapter

This is the approach used in the Diné College reading course for reading a textbook chapter (Fillenworth, 1994). It condenses the SQ3R steps to three. In step one, students preview the reading material, thinking about what they need to know. As they preview, they plan how long they think it will take them to read the chapter and what strategy (e. g., outlining, summarizing, highlighting, underlining, flashcards, marginal notes) they want to use to organize the information. This correlates with the Sa'ah and Naagháí in the Navajo framework.

In step two, students read the material closely, a section at a time. This step corresponds to the Bik'eh of the Navajo framework. Students then organize the material into a format that fits their learning style, based on their initial preview of the chapter. This step forces students to review the material for retention and comprehension. This approach give students a procedural scaffold from which they can construct their own reading strategies to organize information. This last step fits into the review and reflection concepts of Hózhóón.

KWL Approach for Reading a Textbook Chapter

KWL is well documented in the literature as a comprehension strategy valuable for all grade levels for understanding expository text (Conner, 2004; North Central Regional Educational Laboratory, n.d.; Ogle, 1986). It is primarily teacher-directed, but can be taught to college students as an independent approach.

K stands for knowledge; students ask, "What do I already know about the subject of the chapter?" They then write down ideas that they know about the subject. In this process of thinking about and generating ideas, they are demonstrating Sa'ah.

W refers to the "what" part of the approach. Students ask, "What do I think I need to know?" or "What do I want to know?" about the chapter topics. Students can create a chart where they brainstorm words, terms, questions, or phrases that they want to make sure to think about. In this way, they are planning their reading strategy, or demonstrating Naagháí. They then read the text, or implement the Bik'eh of the Navajo framework.

The L stands for what has been learned after reading the text. Students ask, "What have I learned?" They organize this information by taking notes, underlining, mapping,

or highlighting the information. They can record this information while they are reading or after reading. This step of reflection is called Hózhóón in the Navajo philosophical framework.

College Exams and the SNBH Philosophy

The PLAE model is used for preparing for exams. It has been successful with college students in improving their metacognition skills and test performance across a variety of content areas (Nist & Simpson, 1989; Stahl, Simpson, & Hayes, 1992). Students preplan their approach by defining the tasks or problems necessary for preparing for the exam and setting goals and timelines for studying. In thinking about the process they want to use to tackle studying, they are using Sa'ah of the Navajo philosophy.

Students then list the strategies they will use to carry out this task, or plan their study approach. They outline their goal for each study session and the amount of time they predict it will take to reach the goal (i. e., Naagháí). They activate the plan and monitor their progress, making necessary modifications as exam time approaches. This is the actual implementation of Bik'eh of the model.

Finally, they evaluate their approach after the exam has been returned. They look

Table 1
SNBH Philosophy as it Informs Reading and Testing Strategies.

SNBH	SQ3R	SQ4R	PLAN	PRO	KWL	PLAE
Sa'ah Thinking	Survey	Survey	Predict	Preview	Knowledge	Preplan
Naaghai Planning	Question	Question	Locate	Preview	What (to learn)	List
Bik'eh Doing, Implementing,	Read and Recite	Read and Review	Add	Read	What (to learn)	Activate
Hozhoon Reviewing and Reflecting	Review	Recite and Reflect	Note	Organize	(What was) Learned	Evaluate

at the results and diagnose errors, looking for patterns of strengths and weaknesses. Students determine how to prepare more effectively for subsequent exams. They thus reflect on a better plan for next time (i. e., Hózhóón).

College Teaching and the SNBH Philosophy

All of these reading (SQ3R, SQ4RM PLAN, PRO, and KWL) and test-taking (PLAE) approaches are taught using the SNBH framework as illustrated in Figure 1. As each technique is introduced, students compare the four stages of the Navajo Educational Philosophy to the reading or testing strategy. Students discuss how these strategies or techniques fit into the framework of the SNBH philosophy. In this way, the legitimacy of their cultural knowledge is recognized and strengthened. Bridges were built between the meaningfulness of culture and the academic college environment. They use their own textbooks from content classes to practice and thus directly apply the methods to their courses.

Implications for Teaching Culturally Diverse Students

The SNBH framework allows faculty to apply culturally-responsive teaching to their curriculum at Diné College. Gay (2000) stated that this type of learning framework, "enables students to find their own voices, to contextualize issues in multiple cultural perspectives, to engage in more ways of knowing and thinking, and to become more active participants in shaping their own learning" (p. 35). As Forell (2005) aptly phrased it, "Learning is dictated by belief systems, institutions, relationships, and social experiences and cannot be viewed as independent of cultural norms and values" (p. 38). Applying reading and learning techniques to the SNBH philosophy acknowledges and validates the norms and values of the Navajo culture and empowered students to learn incorporating the Navajo educational philosophy.

Other instructors at Diné College also apply the SNBH philosophy to their teaching. For example, the chemistry instructor has developed a unit on minerals and elements and related the content to the uranium mining controversy on the reservation. The math instructor has given a lesson on Fibonacci numbers in the context of the Navajo creation story.

As faculty discover the layers of multiculturalism in their own classrooms, they need to consider many things: curriculum, content, learning context, instructional techniques, performance assessments, and cultural philosophies. Staats (2005) contextualized mathematics at the college level by using the issue of global diseases like HIV to teach the topics of slope formula and exponential growth. She found that discussing this social issue enriched the math curriculum and students reported that this made the class more "real" and personal. Along these lines, contextualizing reading strategies into Navajo philosophy has transformed students' understanding of the reading process.

Following this approach of culturally-responsive teaching, a literature class could use multiple ethnic perspectives and literary genres. Mathematics could incorporate everyday-life concepts such as economics and employment as they relate to the

environmental reality of the local region. The field of knowledge construction asks how individuals create knowledge from prior knowledge and how faculty can facilitate this process (Christal, Kreipe de Montano, & Resta, 2004). Culturally-responsive teaching is one way to bridge the gap inherent in mainstream academic knowledge, which emphasizes Western-centric concepts and theories prevalent in our current educational system.

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Call for Manuscripts

Journal of College Reading and Learning

The Journal of College Reading and Learning (JCRL)—a national, peer-reviewed forum for theory, research, and policy related to college literacy and learning—invites interested authors to submit manuscripts for publication.

The JCRL seeks manuscripts with a focus on the following topics at the college level: effective teaching for struggling learners, learning through new technologies and texts, learning support for culturally and linguistically diverse student populations, and program evaluations of developmental and learning assistance instructional models.

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For further information, contact Dr. Emily Miller Payne, Editor, Texas State University-San Marcos, at jcrl@txstate.edu or by phone at 512.245.2438. We also encourage you to visit the Journal website at http://www.crla.net/journal.htm.

Book Review
How College Affects Students. Volume 2: A Third Decade of Research

Pascarella, E. T., & Terenzini, P. T. (2005). *How college affects students. Volume 2: A third decade of research.* San Francisco: Jossey-Bass.

Reviewed by Emily Goff, University of Minnesota

As a graduate student focused on adult and higher education, I have seen the book *How College Affects Students* (1991) cited in dozens of peer-reviewed articles. However, after finishing my graduate school coursework I realized that this oft cited book had never been an assigned reading and I am ashamed to say that I could not quite muster the intellectual curiosity to tackle it in my leisure time. So, when the opportunity to review the new edition of this book, *How College Affects Students: A Third Decade of Research,* for *The Learning Assistance Review* appeared, I jumped at the chance. However, it has proven tougher than I had imagined to summarize a book that spans over 800 pages, and reviews thousands of research studies, and delves into nearly every aspect of the collegiate student experience with astounding depth. Although I will not be able to do justice to this massive work in a brief review, I do hope that I can encourage readers to add this book to their collections.

How College Affects Students: A Third Decade of Research is the second book by Ernest T. Pascarella and Patrick T. Terenzini to review the research regarding the impact that college has on students. Their first volume, cited over 2,600 pieces of research published prior to 1990. Both their original volume and the recently published second volume are organized around six central questions. They ask:

1. What evidence is there that individuals change during the time that they are in college?
2. What evidence is there that change or development during college is the result of college attendance?
3. What evidence is there that different kinds of postsecondary institutions have a differential influence on student change or development during college?
4. What evidence exists on effects of different experiences in the same institution?

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5. What evidence is there that the collegiate experience produces conditional, as opposed to general, effects on student change or development?

6. What are the long-term effects of college? (Pascarella and Terenzini, 2005, pp. 8-9)

Although the conceptual framework and organizational structure of the two books is the same, the content is entirely different. In almost every area of research that is covered in this volume, Pascarella and Terenzini note that the focus of research on the subject of how college affects students is now much broader than in previous decades. The broadening of the research focus is made evident in a number of ways. First, research in the 1990s focused on a broader and more realistic representation of who the students being affected by college were and there is an increased focus on students who fall into categories other then the traditional-age (18 to 24 year-old) White students who were the focus of the bulk of the research cited in the first volume. Second, in addition to focusing on a broader representation of students, the second volume presents research from a broader representation of the myriad formats of higher education—including two-year community colleges, women's colleges, and historically Black colleges and universities (HBCUs). A third aspect of the research that was covered in this volume that represents a broadening of the scope of the research in higher education is in research methodology; although positivistic, quantitative studies continues to represent the bulk of the data presented in this volume, there is an increase in the number of qualitative, naturalistic studies that are referenced and reviewed.

How College Affects Students: A Third Decade of Research is divided into chapters that treat a specific area of college student development. Chapter 1 provides an overview of the research that was reviewed for this volume and explains the organization of the book. Chapter 2 presents theories and models of student change. Chapter 3 looks at the development of verbal quantitative, and subject matter competence. Chapter 4 reviews the research regarding cognitive skills and intellectual growth. Chapter 5 focuses on psychosocial change, Chapter 6 on the impact that college has on students' attitudes and values, Chapter 7 is focused on moral development, and Chapter 8 reviews the current research focused on educational attainment and persistence. Chapters 9 and 10 look at the impact that college has on students after the fact—Chapter 9 focusing on career and economic impacts of college and Chapter 10 on the quality of life after college. The last two chapters provide a more concise summary of the overall findings of the research. Each chapter of the book begins by summarizing the findings that were reviewed in the previous volume and then goes on to look at the issue from the perspective of each of the six questions that provide the overall conceptual framework. At the end of each chapter, the authors provide an additional summary arranged again around each of the six previously posed questions.

The book is organized in a way that makes it an invaluable reference tool. The author and subject indexes are very easy to use and detailed. I have already found myself turning to them when I am researching an unfamiliar topic in higher education. When I was asked to conduct a literature review on the subject of academic autonomy, in addition to finding a detailed description of autonomy as described in Chickering's seven vectors of student development, I was also pointed toward a number of studies

that looked at changes in academic autonomy during college as well as the net effect of college on students' autonomy within the chapter on the psychosocial effects of college (Chapter 5).

An area of this volume that might be of interest to both learning assistance professionals and developmental educators is the section that covers general pedagogical approaches in Chapter 3. This section reviews dozens of studies that have analyzed approaches such as Supplemental Instruction (SI), distance learning, and constructivist-oriented approaches to learning. In addition to providing helpful data regarding the effectiveness of these approaches, the authors review and critique the techniques and samples used in the cited studies, providing future researchers with helpful suggestions for how to approach these subjects.

Of additional interest to both learning assistance and developmental education professionals will be the thorough treatment of the issues surrounding persistence through college for the most vulnerable students. Both developmental education coursework and SI programs are cited as interventions that increase persistence for traditionally vulnerable groups. This volume also cites research that shows that participation in learning communities and freshman seminars can positively impact persistence. For those professionals who are interested in these topics, *How College Affects Students: A Third Decade of Research* confirms much of the research done in previous decades and reported in the first volume and also offers helpful suggestions for future directions in this area of research.

Although there is a wealth of information for both learning assistance professionals and developmental educators, it is unlikely that any individual would want or need to read this book from beginning to end, and because of the highly structured and repetitive organization of each chapter, it is a difficult read. However, it is important to note that because the scope of this book is much broader—and the depth more profound than the research interests of any one individual are likely to be—it is hard to imagine that it was written with the intent of being read cover-to-cover by anyone.

I cannot imagine the amount of time and effort that *How College Affects Students: A Third Decade of Research* represents. Not only is it well organized and comprehensive but also it is also well written and enjoyable to read. As a novice researcher focused on higher education I am thankful to have this volume as a resource. I hope that the authors have the energy and resources to continue this project and provide us with a third volume covering future decades of research.

Reference

Pascarella, E. T., & Terenzini, P. T. (1991). *How college affects students.* San Francisco: Jossey-Bass.

Call for Manuscripts: The Learning Assistance Review

As an official publication of the National College Learning Center Association (NCLCA), ***The Learning Assistance Review*** seeks to foster communication among learning center professionals. Its audience includes learning center administrators, teaching staff, and tutors, as well as other faculty members and administrators who are interested in improving the learning skills of postsecondary students. ***The Learning Assistance Review*** is available free of charge to all NCLCA members. The library or institutional subscription rate is $25.00.

The Learning Assistance Review aims to publish scholarly articles and reviews that address issues of interest to a broad range of academic professionals. Primary consideration will be give 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.

The journal is published twice a year, in the spring and fall. The co-editors are issuing this call for manuscripts to all learning professionals who are interested in contributing to the field through the publication of relevant, scholarly articles. All submissions are subject to a masked review process.

Manuscripts will be forwarded to the editorial board for masked peer review. Authors will then be notified regarding the status of their articles and will receive recommendations and feedback in a timely manner.

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1. Manuscripts and reference style must be in accordance with the Publication Manual of the American Psychological Association (5th ed.). Submissions that do not comply with APA style will be returned to the author(s).

2. Manuscripts must be typewritten, double-spaced, minimum one-inch margins, regular type face/font, preferably 12 point, no right justification. Do not use boldface type or special fonts. Italics are used instead of underlining for titles and emphasis, including subheadings and in the reference list (see APA manual, 5th edition, pp. 100-103).

3. The subject matter must be relevant to the journal's audience.

4. Manuscripts must not duplicate previously published works or articles under consideration for publication elsewhere. All authors will be required to sign a non-duplication agreement.

5. The title page must include the title of the manuscript (not to exceed 12 words); the name(s) and institutional affiliation(s) of all authors. The lead author should also provide work and home addresses, telephone numbers, fax, and e-mail information, if available. All correspondence will be with the lead author, who is responsible for all communication with any additional author(s).

6. The second page should be an abstract of the manuscript, maximum 100 words.

7. The title of the paper should be centered at the top of the third page, double-spaced, and followed by text (see APA manual, 5th edition, p. 298). The body of the manuscript may range in length from 10 to 20 pages, including all references, tables, and figures. Longer articles will be considered if the content warrants it. Each page should include a header and page number in the upper right corner, as described in the APA manual (see APA manual, 5th edition, p. 288).

8. Any information that might identify the authors, such as names and institutional affiliations, must be omitted from the body of the manuscript. This information should be replaced by "[name withheld for masked review]." Where appropriate, identifying information will be inserted following the masked review process.

9. Figures and tables must be camera ready, according to APA style, on 8½" x 11" paper, one per page, with figure captions appearing on a separate page. Any figures, drawings, diagrams, or tables must be the original work of the author(s). Only figures and tables that are necessary support to the text will be published. Please indicate approximately where figures or tables should be placed within the text. Put in the text:

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10. Only references cited in the text may be included in the reference list. Care must be taken to attribute all quotations to their published sources. Direct citations for quoted work must be provided except in those rare situations when the original source is not available. Direct quotes must be accompanied by citations, including page numbers. The authors are responsible for the accuracy of all citations and references.

11. The only acknowledgments that will be published will be those required by external funding sources.

12. Manuscript authors must agree to abide by revision decisions made by the editors.

13. Upon acceptance the author(s) will be responsible for making required revisions and resubmitting the manuscript electronically.

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15. Send three paper copies of your manuscript as well as an electronic version (i.e., on disk or as an e-mail attachment) to:

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NCLCA Membership Information

What is NCLCA?

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

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

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

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