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# THE LEARNING ASSISTANCE REVIEW

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

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

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## Letter from the Editors

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This issue is dedicated to the professional scholarship and administration support that fosters and encourages growth in the learning assistance field. It is that very dual pronged commitment to student academic success that allows the profession to flourish and, in turn, helps provide students with the ability to experience improved learning experiences—which is the very essence of learning center missions across the board.

Specifically, this issue has three superb articles that substantially add to the discourse of our field. The article “Does the Use of Appreciative Advising Work?” looks at improved retention rates through this technique. The article “The Effect of Writing Centers and Targeted Parings on Students Repeating First-Year Composition” explores the improved passage rate of students who use writing tutors. The final article “Use of Curricular and Extracurricular Assessments to Predict Performance” explores the impact of specific techniques for medical students on their medical board exams. All of these articles keep student learning and student success as their motivation. What makes this issue rich with diversity is that each embraces that goal through a different viewpoint. It is that very diversity in exploration that adds depth to the field and enriches every learning center’s ability to assess and enhance its own programs. I am proud that *TLAR*’s scholarship can provide such rich opportunity for professional exchange.

I am also proud to announce that this issue will be expanding its audience to the web because it will be the first *TLAR* issue listed in the EBSCO electronic academic database.

The high level of scholarship demonstrated by our authors is possible because each author has received administrative support, an essential partner for providing the environment conducive for both conducting empirical studies and writing articles for publication. It is an important team.

Along that line, I want to take a moment to highlight and thank Lourdes College for its administrative support of *The Learning Assistance Review* (*TLAR*) and, in-turn, the National College Learning Center Association (NCLCA). This will be the last issue with the direct administrative support from Lourdes College in Sylvania, Ohio because I have accepted a new position at another institution. Yet, Lourdes College has upheld its initial commitment made to the NCLCA two years ago and has provided administrative support (through the managing editor and administrative assistant support) to assure this issue’s publication. It is this type of exemplary support that I have enjoyed throughout my tenure at the college and throughout my time as *TLAR*’s editor. I respectfully thank Lourdes College, specifically its President Robert Helmer and Vice President Janet Robinson for their personal support during the last three issues and this fourth issue. Without their dedication to NCLCA, I would not have been able to sustain the rigors of publishing.

I also want to take an opportunity to thank two absolutely essential components for TLAR's success: Managing Editor Susan Shelangoskie and Administrative Assistant Chrissy Knapke. Dr. Shelangoskie has been instrumental in creating an electronic database that provides an efficient tracking system for members of the review board, manuscript submissions, and publishing criteria. She has also been my champion of setting the journal into print form, without which there would be no publication. Mrs. Knapke has been my right—and at times my left—arm. She not only created a procedure manual which keep the publication on track from one issue to the next, but, also, she attends to all the mountains of details that allows us to focus on editing. Although I will be staying on as editor, it will be without my colleagues. I wish to take this moment to acknowledge my deepest gratitude and admiration to both Susan and Chrissy. Their support was part of the Lourdes College commitment to this publication and to NCLCA; it is this type of college support that not only reinforces the college's mission and strategic plan that encourages scholarship throughout the college; it is what makes Lourdes College special. It is this inclusivity that provides the opportunity for the international learning community profession to maintain a venue for professional discourse.

**Christine Reichert**  
**Editor**

**Susan Shelangoskie**  
**Managing Editor**



# Does the Use of Appreciative Advising Work?

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## Abstract

*This paper discusses the results of a survey completed by students who were on academic warning and agreed to attend advising sessions. The format of the advising sessions focused on the 4 Ds of Appreciative Advising with a requirement of three advising sessions and a follow-up survey. The goal of the research was to determine whether Appreciative Advising could be used as a student retention model. This paper will provide the reader with what Appreciative Advising is, how it is incorporated into the advising process, and the results of students' perception of the process through the use of an assessment.*

According to Webster (Merriam-Webster's Collegiate Dictionary, 1993):

*Ap pre ci ate* - value, prize . . . holding a person or thing in high regard

*Ad vice* - a recommendation offered as a guide to action

**A**ppreciative Advising is supportive, positive, dynamic and holistic. It is designed to assist all students by changing their negative thinking pattern (if necessary), while assisting them to find what is the best of what was and what can be, through a positive interaction with an academic advisor. According to Crockett (1985), academic advising is the one system that is required by all students which has the potential to enhance student retention (organizationally).

## Appreciative Advising

Vincent Tinto (1986, 1995) proposed a multivariate model of student retention to explain student departure from college prior to graduation. In his model, Tinto includes a comprehensive set of demographic, cognitive, psychosocial, psychological, and institutional factors. He also writes about the blending of the social and academic environments between the student

and the campus. It is this blending of the social and academic environments where the academic advising through the use of the appreciative model can have a profound impact. The appreciative model can assist in the development of a campus connection, linking the student with a member of the campus community. Appreciative advising is a model which includes mechanisms and processes which allow an approach to the student to occur in a positive and inviting manner. It allows the advisor to assist his or her students by integrating them into the higher education experience, enhancing their self-esteem, modifying their locus of control, and motivating them through the use of Socratic dialog. Appreciative Advising assists in shifting the advisor role from viewing the at-risk student in a "deficit" model (what the student does not have) to a "sufficient or positive" model (what the student has or can do).

### **Assisting the At-Risk Student**

It is believed that all students can be positively affected by Appreciative Advising; it is the at-risk student who can probably benefit most. Quinnan (1997) defines the "at-risk" student as one who "is poorly equipped to perform up to academic standards." Although Quinnan's population was the adult learner, it can be applied to the general student population in that the "at-risk students can include characteristics such as low socio-economic status, academically underprepared, undeclared or lacking a major, first generation, lacking study skills, from a single parent family, an older sibling dropped out of school, had average grades of "C" or lower from eighth to eleventh grade, repeated a grade, or lacking an academic goal (Truschel and Francois, 2005).

The use of Appreciative Advising can be related to the earlier research by Seligman (1975) who coined the term "learned helplessness," which was later changed to "learned optimism." The former includes students who have an external locus of control and a belief that they have no influence over their own destiny. The result can be a lack of confidence and diminished autonomy. Grimes (1997) states that some students use learned helplessness as a self-defense mechanism to view positive outcomes as internal and negative outcomes as external. This deficit process does not assist the students to see their contributions and successes. Much in the way in which Seligman shifted from "learned helplessness" to "learned optimism," we must shift from the usual "deficit thinking" to a "sufficient thinking" advising model.

### **Elements of Appreciative Advising**

Appreciative Advising in an academic setting allows the advisor to use an enhanced form of the problem-solving paradigm. The advisor does not look at the student as though something is broken, wrong, or just not working appropriately. The advisor should approach the student in a positive manner and use supportive language to draw out or accentuate the many successes the student has experienced thus far.

The advising process includes an introductory phase used to determine the appreciative topic around which the inquiry will be focused. The advisor should ask their students to indicate what is important to them and what achievements give them most pride. According to Cooperrider and Whitney (2000), it is important to first look at the best of “What Was” or “What Is” instead of seeing a problem. This is the beginning of what Cooperrider describes as the 4-D cycle, or the “Discovery phase.” According to Paddock (2003), the “Discovery phase” has 2 sub-steps. The first is the development of affirmative and positive questions. The questions should elicit stories about times when the student was successful. The questions should focus on the students to consider the unique strengths and values they possess. The second sub-step (also called the Dream Phase) directs students to consider their futures. They should be asked to think about what their futures can look like (in a successful mode), and how they can make their thoughts or dreams into reality. Creating an opportunity for positive dialogue is critical at this stage rather than trying to analyze the cause of students’ problems. The students should be asked what they want to see in their futures (as a core theme). The dream images will be translated into a positive and a present tense action plan. The power of this activity is that the students see the product of their dreams and they integrate it into their next steps.

Next is the “Design phase,” which is an integration of what the students wish or dream will occur in the future, also known as the goal or plan. The “Design phase” flows from the “Dream phase” with careful consideration and analysis of what can be achieved. This is when students focus on what they can do to enhance their academic strengths rather than what is customarily done such as analyzing the problems. The students will begin to lay a foundation to move toward success, creating their plans for the future.

According to Truschel (2007), the final or “Destiny phase” is the point where students take action on the plan they developed. During this stage, students should try to imagine their futures in a positive manner and begin to move their plans or goals into actions. The advisor should be aware that students often drift back to their previous failures and, therefore, should be coached to leave their past failures behind while focusing on their potential for success.

Appreciative Advising is positive and action-oriented. The advisor and the student should form a working alliance. This alliance will allow the advisor to interview the students in order to learn what is important in their lives. This will then become the appreciative topic from which the dialog will focus. During the interview process, it is important to get a complete description of what positive experience the students had in their pasts which can then be related to present issues. According to Adams, Schiller, and Cooperrider (2004), the subject of question asking is primary and universal; it is fundamental to any consideration about the ways we human beings perceive, think, feel, and make meaning. Questions are also at the core of how we listen, behave, and relate as individuals. Virtually everything we think and do is generated by questions.

A set of interview questions (located in the appendices), which were developed to be affirming and thought-provoking, were used to support the Appreciative Advising effort. During the initial advising session, it is

important to put the student at ease by making him/her feel as comfortable as possible. As the interview proceeds, it is important to accent the positive attributes, and if the conversation drifts to negative attributes, the conversation should be redirected to the strengths the person possesses as soon as the conversation allows. The advisor should maintain a working alliance and focus on developing trust and expressing genuine concern for the student's success. The advisor should ask their students important questions openly and objectively, with no special attitude or opinion presented (Giorgi, 1985).

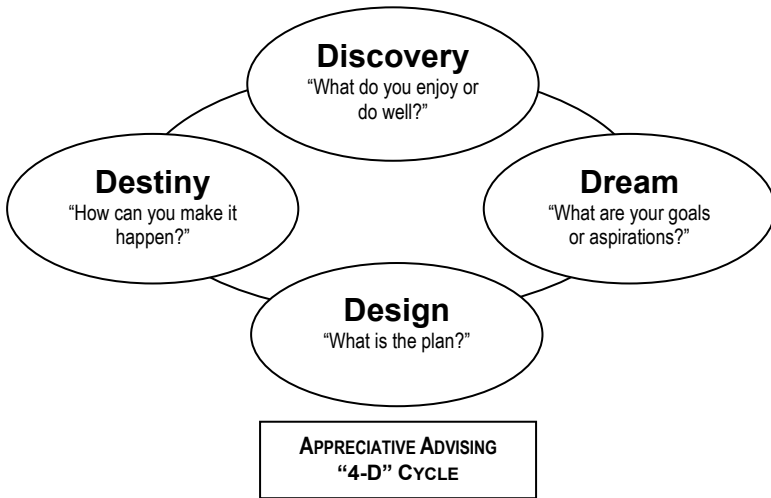


Figure 1. The 4 D Cycle of Appreciative Advising by J. Truschel. Retrieved July 25, 2008, from *The Mentor*: <http://www.psu.edu/dus/mentor>.

As part of the Appreciative Process, it is important to acknowledge and affirm the meeting by sending a brief note (paper or email) which is designed to thank students for seeing the advisor, and if possible, to synthesize their agreed upon goals. Although this takes time, it is extremely useful because it supports the working alliance, lets the students visually see the conversation, continues to establish rapport, and supports their positive position on their plan.

Once the Discovery phase is complete and the working alliance established, it is important to work through the next phases in rapid succession, moving the locus of control from the advisor to the student. The advisor should ask the student to envision what might be, in a positive manner, asking the student to first verbalize this and then put it in writing. The student should integrate his/her wishes for the future using strengths and previous achievements. Once this is accomplished, the advisor should ask the student about his/her future, and then he/she needs to move his/her design plan into action.

## Methodology

This research study examined what the at-risk undeclared population felt after they received advising related to having a quality point average less than a 2.0 and being placed on academic warning. To explore these variables, an Appreciative Advising Instrument was developed which consisted of four subscales: self-efficacy, self esteem, motivation, and commitment to the positive process. The 15 items used an ordinal scale for rating. These measures were administered to 112 college students at a Comprehensive Public Regional University.

## Participants

Participants were students who obtained less than a 2.0 quality point average and had less than 30 earned college credits. Students were sent a letter indicating their academic status and were invited to a meeting with their academic advisors during the first two weeks of the fall 2006 and spring 2007 semesters. This study population consisted of a total of 112 students (58 from the fall 2006 semester and 54 students from the spring 2007 semester) and included second and third semester students who were currently enrolled at the university. Participation in the study was completely voluntary.

The participants were advised about the nature of the study and were permitted to decline participation at any time. There was no identifying information such as name, social security number, student number, address, or phone number requested as part of this research.

Students were advised three times during the first five weeks of the semester. The first session focused on developing a working alliance with the student and the use of the Discovery phase which allowed for the identification of the student's positive life themes. The second meeting included the Dream and Design phases. This included developing provocative questions for the future, such as: "What might be?" or "What are the possibilities?" Then the students were asked to develop a plan for their futures. The students were asked to focus on a vision that was realistic, rooted in strengths. The third and final meeting included the Destiny phase. This is when the students discussed the plan they would implement concerning their vision of the future - "What will be?"

## *Instrument*

The Appreciative Advising Instrument was designed to measure the student's perception of traits such as self-efficacy, self-esteem, motivation, and commitment to the positive process. According to Cooperider and Whitney (n.d.), appreciative inquiry is the cooperative search for the best in people, their organizations, and the world around them. It involves systematic discovery of what gives a system "life" when it is most effective and capable in economic, ecological, and human terms. The instrument was designed to determine students' belief during the discovery phase by looking at their affective characteristics. In addition to the instrument's questions, students were asked to write anecdotal information on the reverse side of the questionnaire. Questions used during the advising process are located at the end of this article. Each interview was unique in terms of the

probing or clarifying questions which were asked in order to draw out a full description in the Discovery phase. When beginning this, it is important for the advisor to “set aside predilections, prejudices, predispositions, and allow the information as if it were for the first time” (Moustakas, 1994).

The students were requested to complete survey questions after they concluded the third and final advising session. They were asked to drop the survey off at their leisure in a drop box which was located in neutral area which was not in sight of the advisor’s office. The surveys were collected by a faculty colleague and scored. The assessment included 15 items which used an ordinal scale of “1” meaning “Strongly disagree,” “2” meaning “Disagree,” “3” meaning “Neutral,” “4” meaning “Agree,” and “5” meaning “Strongly agree.” Students were also asked to provide additional comments. The instructions on the assessment form stated, “In order to determine if this approach to academic advising is effective, it would be appreciated to obtain your comments. Please tell me how you feel and make any recommendation(s) that you feel would improve the advising experience.”

### Results

The study received overwhelmingly positive results from the survey and positive anecdotal comments from the participating students. The results are provided in Table 1.

*Table 1. Survey Question Results*

Questions asked	Mean
1. I believe that I have the ability to take care of the academic issues I may encounter.	4.5
2. I am competent enough to make sure that my future academic performance will be successful.	4.6
3. I now have the skills and ability to ensure excellent academic performance for myself.	4.6
4. I believe that I can handle my academic needs.	4.5
5. I have a sense of self-pride from my past academic successes.	4.6
6. How well I perform academically is a matter of my own ability.	4.5
7. I have positive feelings about the way I approach my own academic performance.	4.3
8. I now feel good about methods to cope with my academic needs.	4.3
9. My advisor listens to me and made me aware of my strengths to achieve academically.	4.5
10. My advisor helped me to refocus my efforts from negative to positive feelings about my abilities to succeed.	4.4
11. I will not hesitate to ask my advisor for academic performance assistance.	4.9

*Table 1. continued*

Questions asked	Mean
12. My academic performance is determined largely by what I do (and don't do).	4.9
13. I am very motivated to do well in my academic studies.	4.8
14. I am strongly motivated to devote time and effort to academic success.	4.67
15. I have a strong desire to succeed in school.	4.59
16. It is really important to me that I do well in my academic performance.	4.98
17. Overall, I rate the quality of this advisement experience as excellent.	4.81

Students were asked to provide additional comments about the advising experience. Although there were not a significant number of comments made, those that were made were also very positive. Students reported the following:

- ◆ I thought I was going to get yelled at... thanks!!
- ◆ I did not feel very good to start out, but I liked the thought that I was good at stuff before ESU so, why can't I be good at ESU!
- ◆ Believe it or not, it really helped, thanks.
- ◆ I know I did not apply myself, but I am sure going to try now.
- ◆ My parents almost killed me, thanks for a second chance.
- ◆ My grades in HS were great, what happened?
- ◆ I feel like the little engine that could, toot toot, I will!!
- ◆ Thanks for listening to me, it meant a lot.
- ◆ Ok, I'm not sure why, but I feel better.
- ◆ I know there is someone out there that believes in me.
- ◆ I will make everyone proud this semester.
- ◆ I am happy to finally find an advisor that wants to help me, the last guy yelled and made me feel like crap.
- ◆ I hate general education classes
- ◆ I know what to do, I have a tutor and will do well.
- ◆ I wish my parents listened like this guy.

### *Discussion*

In response to the research question, it appears that students had positively responded to the first step, the Discovery phase, of the appreciative advising process. The overall rating and anecdotal comments overwhelmingly support this approach. There were a few responses (4) which received Neutral as the lowest rating.

The appreciative advising process was somewhat difficult to research because each student and interview is decidedly different. For example, student "A" may deny any real academic problems other than a lack of commitment to the learning process, whereas student "B" would take full blame and believe that he/she did not have the cognitive capability to succeed in college. The result is that each student would be asked very different affirming questions, making the process, for the most part, unique to each student. The items that were exactly the same include the assessment instrument and the pool of questions which were developed in advance of the advising sessions.

The appreciative process was very time consuming and work intensive. The students were advised three times during the first five weeks of the semester. Although this is viewed as positive, it is difficult to accomplish this when there are additional responsibilities as well as students who require attention. The at-risk sample population responded positively to this style of advising with 105 of the 112 students making and keeping all of the appointments.

On a personal level, this researcher felt uplifted and more positive as a result of the affirming interactions with the students. At the end of a busy day, there was a sense of accomplishment and positive self worth with more available energy than there had been when advising students in a negative (deficit) manner. The appreciative advising process places the burden and positive experience on the students who ultimately have control and responsibility of their academic experience.

As a study limitation, there were 146 students who were initially invited to participate in the research study with a total of 112 accepting by attending the first session. This self-selection is a variable that influenced the study, since participating students are possibly more concerned about their academic status and are more motivated to engage in the advising process.

It is believed that this positive form of interacting with students should be incorporated into learning assistance centers since it appears that the at-risk student as well as staff can derive some benefits from this approach. Administrators, faculty, staff, and tutors could benefit from learning more about the appreciative approach by incorporating the 4-D cycle in a comprehensive training program.

### **Future Research**

It would be beneficial to determine whether the students that completed the Appreciative Advising sessions did in fact accomplish their goals to get off academic warning or probation. This would have required the students to identify themselves on the survey instrument, which was not done. It would also have been beneficial to determine if there were particular circumstances which may have had a negative impact on the student's academic progress, such as health, money, etc. I would recommend that future research which uses an Appreciative Advising Survey include a minimum of demographic information—name, student number, gender, number of hours working,



number of hours studying, socioeconomic status, and whether the student is a first generation college student—in order to obtain better demographic information about the student as well as to have the ability to track student's academic progress.

It would have been beneficial to have a control group of at-risk students who did not receive Appreciative Advising in order to determine whether there was a significant difference between student groups.

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# Effect of Writing Centers and Targeted Pairings on Students Repeating First-year Composition

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## Abstract

***This study suggests that students repeating a first-year composition course benefit from working with specific tutors in the writing center. The article focuses on students who did not pass first-year composition and took a tutorial version of the course. A chi-square analysis shows that students working with a specific tutor had a higher pass rate at a significant level than those who did not. Further study should be done with a larger sample size.***

Proving that learning centers and the entities housed within them, such as writing centers, help students achieve learning outcomes and goals in their courses has long been an assessment challenge (Lerner, 1997). There are a variety of ways to assess writing centers. As far back as 1982, Muriel Harris provides data collection forms as part of *Tutoring Writing: A Sourcebook for Writing Labs* as a means to facilitate assessment. Even more recently, quantitative and blended methods for assessing writing center effectiveness have been called for, modeled, and shared (Johanek, 2000; Lerner, 2001; Kalikoff, 2001), as opposed to more narrative accounts. These studies and many others attest to the importance of quantitative assessment as an on-going issue for learning centers. Moreover, the release of the U.S. Department of Education's report *A Test of Leadership*, more commonly called the Spellings' report, in 2006 renewed the focus in higher education on transparency, accountability, and assessment. Institutions of higher education and the learning centers within them will continue to deal with the "a" word: assessment. Directors of learning centers, writing centers, and tutoring groups have been and will continue to be asked to quantify an enterprise that at times seems more qualitative than quantitative, that of helping others to achieve learning outcomes in courses. Not only that, but as

centers adopt new strategies for working with students, these methods, too, must be assessed and placed into context with other assessment efforts.

This study responds to the on-going need to answer the question “how do writing centers help students” by measuring the pass rate of students who repeated a first-year composition course in a tutorial format while it also advocates targeted pairings of students and tutors. Primarily, we asked “Does targeted pairing of a writing center tutor with a student improve the pass rate for repeating students?” Secondly, we asked, “Does working with any available writing center tutor improve the pass rate for repeating students?” We hypothesized that having these repeating students work with a writing center tutor would result in a pass rate higher than that of students in the course not working with a tutor. Furthermore, we hypothesized that students who were deliberately and specifically paired with a writing center tutor would pass the course at a higher rate than the other two groups of students. Our findings suggest a connection between writing centers, and by extension learning centers, and student success in achieving learning outcomes. This article also offers a preliminary indication that methods such as targeted pairing of students and tutors can further enhance such achievement.

## Background

Numerous articles connect writing center usage with measurable markers of success in the composition classroom. Many do so by discussing the efficacy of the collaborative learning model upheld by writing centers, proclaiming the value of the collaborative conversation and the empowerment of students to write on their own aided by the support and coaching of peers (Bruffee, 1984; Ede and Lunsford, 1983; Harris, 1992). Although many writing centers adhere to the concept discussed by Stephen North in “The Idea of a Writing Center” (1984) that using the center can lead to better writers, not necessarily a better grade, as North himself acknowledges in his “Revisiting ‘The Idea of a Writing Center,’” students are motivated to visit the writing center in order to attain good grades (1994). This study reflects the assumption that collaborative learning endeavors can assist students’ development as writers using students’ attainment of a better grade as an indicator of the benefit of this collaboration.

Assessment of writing centers as well as writing courses, similar to the one used in this study, is an on-going issue in the rhetoric and composition and writing center fields. As Haswell and Wyche-Smith, among others, have noted, not only are there diverse responses to composition assessment measures, be they adopted by composition faculty or forced upon them, there are also numerous assessment measures, including portfolio assessment, available to writing programs (1994). Entire journals (such as *Assessing Writing*) and book length studies (for example: *Portfolios: Process and Product* (Belanoff and Dickson, 1991) and *(Re)articulating Writing Assessment for Teaching and Learning* (Huot, 2002) ) address the issue of writing assessment and the strengths of assessment methods like portfolios. By focusing on a population that has already experienced portfolio review within a writing program, we agree with those who argue that portfolio assessment can measure students’ achievement of established learning outcomes and that passing portfolio review, as well as earning a passing grade in the course, can be an indicator

of student success. Thus, this article's focus is informed by the on-going enterprise of writing assessment, but more particularly it examines how writing centers can enhance the help given to writing students and begin to assess that help.

In the case of The University of Findlay, one of the assessment measures used in the writing program is a portfolio review, so the tutoring given to these students at the writing center focuses, in part, on the learning outcomes of the course as measured by the portfolio. When writing programs use a portfolio review, writing centers respond in a number of ways. The writing center may make administrative changes in the way appointments are structured to deal with pre-portfolio rush (Clark, 1993). Some writing centers have offered portfolio workshops such as the one at Lansing Community College (Montague-Bauer, 2005). When helping repeating students, who may have chosen to revise a previously submitted portfolio paper and are not only "hyper-aware" of the learning outcomes but also anxious to earn a passing grade and pass the portfolio, writing centers face additional challenges. One of the responses undertaken at The University of Findlay for three semesters was to pair repeating first-year composition students in an English 107 class with tutors at the writing center.

## **Methodology**

### *Participants*

Our population consisted of 199 students enrolled in English 107: College Writing II – Tutorial over a five year period, or ten semesters, from academic year 2003-2004 to academic year 2007-2008. We targeted this population in response to an on-going complication in applying scientific inquiry to composition classrooms and, by extension, to writing centers. As Lerner notes, isolating variables that could account for student grades is difficult when we cannot be certain that students are starting from the same point (Lerner, 2001). All English 107 students start from the same point: they have earned the grade of NC or "no-credit" in English 106: College Writing II, or in a few cases, in English 107 itself. Thus, for all students in English 107 the last grade they earned in a first-year composition course was the NC, and they all took their previous first-year composition course at The University of Findlay.

English 106, or its tutorial equivalent English 107, is a competency course required for graduation, meaning that students must pass the course with a C or higher. Because of the graduation requirement, a grade lower than C, other than F, is rarely assigned. Students demonstrate that they have met the learning outcomes of English 106 (or English 107) by earning a C or higher in the course and by passing a portfolio review process. Students must assemble a portfolio of at least four major papers, at least three of which must be thesis-driven and argument-based, and pass a review of this portfolio conducted by at least one English 106/107 instructor. The portfolio is judged against a set of criteria and standards established and defined by the English department, particularly English 106/107 instructors. There are four general criteria: thesis and development, documentation, organization and style, and grammar and mechanics. A portfolio that fails this review has not sufficiently met one or more criteria as evaluated by as many as four

instructors. The teacher of record retains final authority when assigning a grade. By common agreement, however, instructors only assign the two grades that are options when a portfolio fails: an F or an NC. It should be noted that students can receive an NC or “no-credit” grade independent of portfolio review at the discretion of the instructor. It also should be noted that in rare circumstances when a student has earned an NC but needs to receive credit hours for the course for scholarship purposes, a D may be given instead of the NC.

In any given year, the final pass rate for the portfolio review in English 106/107 is typically about 78-80%; of those not passing portfolio review, approximately 10% receive an NC. Students earning the NC are those who have given every effort to developing their writing skills. These students attend class, turn in all assignments, and meet all other course requirements, but their writing is still not at the level necessary to pass this required class, which signals competence to write for other classes in the university setting. The NC, then, is meant to acknowledge progress and to recognize that some students require more time than others to develop the needed level of skill and proficiency. Students earning the NC are not apathetic students, but rather inexperienced writers.

Until Spring 2003, students receiving the NC retook English 106, sitting in class with new students approaching the materials for the first time. This repetition was often discouraging for repeaters, so in Spring 2003, the English department offered English 107, a tutorial version of the course. English 107 has the same learning objectives and outcomes as English 106 but is capped at twenty students rather than twenty-four to allow for more individualized attention from the instructor inside and outside of class. Thus, students in the course share a common background: they are hard-working students needing more time to develop their writing skills in order to demonstrate that they have met the learning outcomes with their grades and their portfolios. All students enter the course having earned the NC in their previous first-year composition course and having already assembled a portfolio of works from that previous course. Although different instructors have taught English 107, every semester the course has been offered students have had the option of revising at least one portfolio paper and have been encouraged to work with a tutor at the writing center. Students and tutors have given implied consent to the study and all reported data is grouped so as to preserve anonymity.

### *Procedure*

Like most learning and writing centers, the writing center at The University of Findlay keeps records of student visits to the writing center by name of student, by course for which the student is using the writing center, and by name of the tutor who worked with the student. As a result, we were able to track which students from English 107 in general used the writing center as well as which paired English 107 students met with their tutors.

Sometimes English 107 instructors informally conferred with the writing center director regarding tutors who could best help a particular student with a writing issue. For three semesters, however, this consultation was more systematic. The instructor of the English 107 course interviewed her students regarding their perceived strengths and weaknesses in their own

writing, as well as their schedule of availability for using the center. The writing center director paired these students with writing center tutors based on her knowledge of those tutors' strengths and weaknesses as both writers and tutors. For example, tutors who were stronger with thesis and development were paired with students who self-identified as weak in this area, a weakness that could be confirmed by reviewing their English 106/107 portfolio evaluations. Students who wanted help with documentation or emphasized grammar as a concern were paired with tutors who were confident in these areas. The tutors' work schedule was checked against that of the students to ensure that student and tutor could work together. A common excuse for not using the writing center from repeating and non-repeating students alike is that it isn't open when they could visit. By consulting students' schedules and pairing them with a tutor working during their available hours, the writing center director circumvented this excuse. Therefore, if the paired English 107 students did not use this resource, it was for reasons other than schedule conflict.

Finally, informal observations of both students' and tutors' personalities were also used in the pairing process. Many of the tutors, as revealed by the unofficial Myer-Briggs Indicator taken in the tutor-training class, are introverts. Thus, we were able to pair these tutors with quieter, more reticent students, whom a more exuberant tutor might overwhelm, further compounding any negative writing experiences the repeating students may have had. If the English 107 students had used the writing center when enrolled in their previous writing course and found it unhelpful, they often attributed the problem to a "poor match-up" with the tutor. Looking to ameliorate the negative associations these repeaters had with writing, we wanted to match up more compatible personalities as well as complementary writing skills. Both the students and the tutors were made aware of the purpose of the pairing.

Because we wanted to determine whether the pass rate of English 107 students is dependent on tutor usage at the writing center, we chose the chi-square test of independence (or association). The chi-square test of independence is used to analyze the relationship between two variables. The interdependence of observed events involving nominal data is difficult to assess; this test provides an appropriate method by which to analyze the data in this study. When using the chi-square test of independence, the null hypothesis always states that the variables are not related, or independent; the alternative hypothesis states the opposite. Three separate tests were conducted to determine whether any relationship or association exists between the variables. First, we tested whether any relationship or association exists between the variables of *tutor usage in the writing center* and *pass rate*. Then we further tested our primary hypothesis addressing the relationship between variables of *targeted and not targeted pairings of tutor* and *pass rate*. Finally, we tested our secondary hypothesis, which seeks a relationship between working with any available *writing tutor* and *pass rate*. An alpha level of .05 was used for all statistical tests.

## Results

The null hypothesis for our first test is that the two methods of classification are independent; consequently, the null hypothesis always states the *status quo* when trying to test if the alternative, in this case that there is dependence, is true. If the two variables are dependent, this would imply that how, or if, the students used the writing center makes a difference as to whether the students pass or fail the course.

$H_0$ : There is not an association between tutor usage in the writing center and pass rate.

$H_a$ : There is an association between tutor usage in the writing center and pass rate.

The data were tallied and are displayed in the following contingency table.

*Table 1*

*Tutor Usage in the Writing Center and Pass Rate*

	Tutor Usage in Writing Center			Total
	Targeted	Not Targeted	No Writing Center	
Success	35	13	111	159
Fail	2	5	33	40
Total	37	18	144	199

For significance at the .05 level with 2 degrees of freedom, a  $\chi^2$  value of 5.99 or greater is required. We obtain a  $\chi^2$  value of 6.346 for these data, which is greater than 5.99. This shows that there is some evidence of an association between the tutor usage in the writing center and success in English 107. To further explore the data, we will more specifically consider our aforementioned primary and secondary hypotheses.

Our primary hypothesis seeks to determine whether targeted pairing of a writing center tutor with a student increases the pass rate for repeating students; that is, the variables *targeted pairing with a writing center tutor* and *pass rate* are related or dependent.



$H_0$ : There is not an association between targeted pairing with a writing center tutor with a student and pass rate.

$H_a$ : There is an association between targeted pairing with a writing center tutor with a student and pass rate.

Table 2

Target vs. Not Target Pairing of Writing Center Tutors with Students

Success	Tutor Usage in Writing Center		Total
	Targeted	Not Targeted	
Pass	35	13	48
Fail	2	5	7
Total	37	18	55

The results for these data are  $\chi^2=5.484$ . For this to be significant at the .05 level, with 1 degree of freedom,  $\chi^2$  must be 3.842 or greater. Since our test statistic is at a greater level, we can conclude that there is evidence of a relationship. However, because the chi-square test assesses only the significance of the association, the percentages per columns are also essential to understanding the data in Table 2. The success of the students that were paired with a tutor is 95% (35/37) compared to a 72% (13/18) success rate when using any available tutor. Thus, these percentages help to interpret the association as one that implies that students paired with a targeted tutor are more likely to be successful than those not paired with a targeted tutor in English 107.

Our secondary hypothesis seeks a relationship between *working with any available writing tutor* and *pass rate*.

$H_0$ : There is not an association between working with any available writing tutor and pass rate.

$H_a$ : There is an association between working with any available writing tutor and pass rate.

The table was compiled by combining the first two columns of data (targeted and not targeted) from Table 1 into one column then keeping the third column the same to allow us to compare the appropriate variables. The new arrangement of data is displayed in Table 3.

Table 3

*Using vs. Not Using the Writing Center*

Success	Usage of Writing Center		Total
	Any Tutor in Writing Center	Did not Visit Writing Center	
Pass	48	111	159
Fail	7	33	40
Total	55	144	199

The value of this test statistic is  $\chi^2=2.578$ . We have 1 degree of freedom, and if we employ a 5% significance level, the rejection region is 3.842 or greater. Because our computed value is lower, we cannot conclude that there is association between these two variables. There is insufficient evidence to reject the null hypothesis of independence.

### Discussion

The first test examining targeted pairings, non-targeted pairings, and not visiting the writing center shows some evidence of an association between the tutor usage in the writing center and success in English 107. Further testing was deemed necessary on the data, as represented in Table 2 and Table 3.

The results of the test conducted on the data in Table 3 suggest that the pass/fail rate for English 107 students working with any available tutor at the writing center is not significantly different than the pass/fail rate for students not using the writing center. Although these results may be surprising to those of us who believe in the value of individualized peer tutoring in a writing center, they are somewhat expected given the individualized tutoring that the professors provide for this course. English 107 students who did not use the writing center at all may have taken advantage of conferences with the professor instead. Moreover, the results do not suggest that using the writing center is of no help to these students *at all*; rather, the results indicate that use of the writing center did not help these students *more than* ones who did not use the writing center.

In contrast, the results of the test conducted on the data in Table 2 give significant evidence suggesting the benefit of targeted pairings of tutors with students, particularly those with previous and self-described negative experiences with writing, as demonstrated by their taking a tutorial version of the required writing competency course. We realize that the numbers are small, but because the pass rate for paired tutoring is higher than those of students working with any available tutor, it can be implied that the method of pairing tutors with students by accounting for strengths, weaknesses, schedules, and even personalities can enhance students' success in meeting course learning outcomes. The pass rate for students in English 107 is 80%,

which is virtually the same as the general pass rate for the English 106/107 population as a whole, which shows improvement given the fact that these students were unsuccessful during their previous attempts to pass the course. However, those English 107 students who worked with a specific tutor passed at a rate of 95% whereas those that worked with any given tutor had a 72% success rate.

### *Implications*

Several implications can be generalized for both writing centers and other tutoring services. First, this study suggests continued assessment measures of a more quantitative nature be tried when responding to administrators' and others' question of "how do you know the writing center (or learning center) is helping students?" The writing center at The University Findlay can use this study as a starting point to demonstrate, particularly to faculty that prefer quantitative assessment to more qualitative tools, that we are engaging in these methods and attempting to quantify our success with students. As noted elsewhere, the limited sample size available at smaller institutions will be a challenge, but this is a beginning.

Second, because this study provides evidence to the benefit of targeted pairings of tutors with students, we propose that this may be a method for other writing and learning centers to consider. Instructors of courses, be they writing, chemistry, math, or Spanish, can interview their students on their perceived strengths and weaknesses in the subject area, observe their personal interactions, and ask for their schedules. These instructors can then consult with the director of the writing center or learning center, who can attest to the strengths, weaknesses, interpersonal approach, and schedules of her tutors, and pair students and tutors accordingly. Students may be more willing to use tutoring services if they know that these efforts have been made to ensure a helpful experience targeted at their success in a course, encouraging repeated visits.

### *Further Study*

One of the challenges in applying quantitative analysis of a writing center at a smaller institution, like The University of Findlay, is sample size. Repeating this study with a larger population would be valuable. Moreover, it would be worthwhile to investigate the results of more targeted pairings of students and tutors not only with a larger population but also across disciplines. Such investigations could corroborate these results both for writing centers and with other tutoring services, complicating and deepening our understanding of how, when, and if methods like targeted pairing yield measurable and successful results. We offer this study as a first step in that direction, aimed at expanding our methods at learning centers and our assessment of these methods.

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# Use of Curricular and Extracurricular Assessments to Predict Performance on the United States Medical Licensing Examination (USMLE) Step 1: A Multi-Year Study

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## Abstract

*This paper studies student performance predictions based on the United States Medical Licensure Exam (USMLE) Step 1. Subjects were second-year medical students from academic years of 2002 through 2006 (n=711). Three measures of basic science knowledge (two curricular and one extracurricular) were evaluated as predictors of USMLE Step 1 scores. The USMLE Step 1 scores correlated with performance on Organ Systems ( $r=0.76$ ), Human Structure ( $r=0.65$ ), and CBSE ( $r=0.69$ ). Accounting for 59% of variance in the USMLE Step 1 scores, Organ Systems course was a better predictor compared to Human Structure ( $R^2=42\%$ ), or CBSE ( $R^2=51\%$ ). Combined, the curricular and extracurricular courses accounted for nearly 70% of total variance in the Step 1 scores. The study concluded that curricular courses are good predictors of student performance on the USMLE Step 1, and their value as identifiers of students at risk for failure is promising.*

In 1994, the United States Medical Licensure Examinations (USMLE) became the only way in which allopathic physicians could obtain medical licensure in the United States (Swanson, Ripkey & Case, 1996). The USMLE consists of four separate examinations, Step 1, Step 2 Clinical Knowledge (CK), Step 2 Clinical Skills (CS), and Step 3 (Federation of State Medical Boards and National Board of Medical Examiners, 2008). Since a passing scores on the USMLE Steps 1 and 2 are required for a candidate to provide medical care under supervision, i.e., to enter residency training, many medical schools have adopted policies that require passage of Steps 1 and 2 for promotion and graduation. The National Board of Medical Examiners (NBME) has not set a limit to the number of times a student attempts to pass the USMLE Steps. However, a majority of medical schools and state medical

boards in the United States have established a limit to the number of times the exams can be taken.

At many medical institutions, passing the USMLE Step 1 examination is required for a student's promotion to the third year clinical clerkships and is particularly essential for graduation (Barzansky, Jonas, & Etzel, 1997). Our institution has required a passing performance on the USMLE Step 1 for graduation since 1992, and during the academic year 2001-2002, the policy was changed to make that a requirement for promotion to the third year clinical clerkships. The attention on student performance on the USMLE Step 1 has increased the need to identify accurate predictors of success. Several recent studies have revealed a number of variables (learning styles, performance on Medical College Admission Test (MCAT), student entry grade point average, age, gender, and race) that correlate with USMLE Step 1 performance (Case, Becker & Swanson, 1993; Elam & Johnson, 1994; Koenig, Sireci, & Wiley, 1998; Lynch, Woelfl, Steele & Hanssen, 1998; Swanson, Ripkey & Case, 1996; Wiley & Koenig, 1996). With the growing significance of students' performance on the USMLE Step 1, research to identify significant predictors of success on this standardized test has also substantially increased. Several studies have previously identified variables such as age, gender, race, learning style, entry level grade point average, the performance on Medical College Admissions Test (MCAT), and undergraduate and graduate grades that correlate with USMLE Step 1 performance (Case et al., 1993; Elam & Johnson, 1994; Koenig et al., 1998; Lynch et al., 1998; Swanson et al., 1996; Wiley & Koenig, 1996). Use of students' performance in the pre-clinical/basic science curricular courses as predictors of USMLE Step 1 scores has been under-explored although researchers have highlighted its importance (Holtman, Swanson, Ripkey, & Case, 2001). Previous research has indicated a correlation between students' performance in the medical gross anatomy course and the USMLE Step 1 score (Peterson & Tucker, 2005). In this study we evaluate the ability of two curricular measures and one extracurricular measure in predicting performance in the USMLE Step 1 examination.

The curricular measures evaluated in this study include the final percent scores achieved in two pre-clinical courses, Human Structure in the first year curriculum and Organ Systems in the second year curriculum. These two curricular measures were selected because they have the highest failure rate at our institution in the first two years of the curriculum. The Human Structure course is part of the first year curriculum; it integrates topics from gross anatomy, microanatomy, and embryology and contains gross dissections and microanatomy labs (The University of Toledo College of Medicine, 2008a). The Organ Systems course is the principal course in the second year of the curriculum. Topics are organized and based on nine major organ systems. These include the relevant physiology, pharmacology, and pathology for the following systems: Cardiovascular, respiratory, renal, electrolytes, hematopoietic, gastrointestinal, hepatic endocrinology, reproductive, skin, and skeletal (The University of Toledo College of Medicine, 2008b). The extracurricular measure evaluated as a predictor of USMLE Step 1 performance was scores on the Comprehensive Basic Science Examination (CBSE).

## Methodology

The study was approved by the Institutional Review Board at the University of Toledo Health Science Campus (formerly known as the Medical College of Ohio). A total of 711 second-year medical students were included in this study. A brief description of the study was presented to the students at one of the USMLE Step 1 Preparation Program sessions offered by the institution's Academic Enrichment Center. The final percent scores for the Human Structure and the Organ Systems courses were obtained from the respective course directors. All students were required to take the paper and pencil version of the CBSE and were allowed a maximum of three hours to complete the test. The USMLE Step 1 was administered at one of the NBME approved testing sites of the student's choice. The majority of students opted to take their USMLE Step 1 at the institution's Academic Test Center, which is one of eight medical school testing sites in the nation that is approved by the NBME. Only the first time USMLE Step 1 scores obtained by the students were used in the analysis.

Data from five consecutive academic years (2002 through 2006) was combined for analysis ( $n=711$ ). All the identifiers in the data were removed in order to maintain confidentiality. Statistical analysis included bivariate Pearson's correlation to test the strength of associations between the measures. Linear regression was performed using each of the three different measures separately and in combinations to identify the model that best predicts students' performance on the USMLE Step 1. Multivariate normality (normal distribution of the dependent variable for each combination of values of the predictors) was examined prior to the regression analysis. Multi-collinearity of the predictors was addressed using the standardized ( $z$ ) scores in the analyses. The predictability (i.e., the ability to explain the variance in the dependent variable USMLE Step 1 score) was interpreted based on the value of adjusted coefficient of determination ( $R^2$ ). For all the models, quadratic and interaction terms were examined to increase the predictability. Significance of the difference between  $R^2$  values from different models were examined using the F statistic. Statistical analyses were performed using SAS 9.1 (SAS Institute, Cary, NC, U.S.A.).

## Results

Descriptive statistics of the combined data from a total of 711 second-year medical students from five academic years (2002 through 2006) are presented in Table 1. The mean USMLE Step 1 score was  $214.2 \pm 21$ , the CBSE was  $63.0 \pm 7$ , and the final average percent scores in the Organ Systems and the Human Structure courses were  $82.7 \pm 7$  and  $80.9 \pm 7$  respectively. There were no statistically significant differences in the mean scores of the three measures across all five academic years.

Table 1.

Description of the curricular and extra-curricular measure scores from academic years 2002 to 2006.

	2002 – 2006 (n=711)
	Mean ± SD
Organ Systems Final Percent	82.89 ± 7.0
Human Structure Final Percent	81.06 ± 7.1
CBSE score	63.44 ± 7.0
USMLE Step1 score	214.6 ± 21.0

SD = standard deviation

All three measures significantly correlated with each other and with the Step 1 scores. A strong positive correlation ( $r=0.74$ ,  $p<0.001$ ) was observed between the two curricular measures. The strongest correlation was observed between the Step 1 scores and the performance in the Organ Systems course ( $r=0.76$ ,  $p<0.001$ ). Performance in the Human Structure course and the CBSE scores correlated moderately with the Step 1 scores ( $r=0.65$ ,  $p<0.001$  and  $r=0.69$ ,  $p<0.001$  respectively).

Table 2 illustrates the results from the simple regression analysis. Performance in each of the two pre-clinical curricular courses significantly predicted students' performance on the USMLE Step 1 examination. Students' final percent score in the Organ Systems course accounted for 59% of the variance in the Step 1 score and was a better predictor than the score in Human Structure course (42%). The CBSE course accounted for 51% of the variability in the Step1 scores.

Table 2.

Simple regression predicting the USMLE Step 1 score\*

	$\beta$	95% CI	p-value	R <sup>2</sup> (%), Intercept
Organ Systems	2.44	2.29-2.59	<0.001	59.6, 11.21
Human Structure	1.91	1.74-2.08	<0.001	42.3, 59.64
CBSE	2.16	1.99-2.32	<0.001	51.1, 77.42

\*All regression models were significant at the 0.01 level (2 sided)

$\beta$  = Regression coefficient; CI = confidence interval; R<sup>2</sup> = Coefficient of determination



Table 3 presents the multiple regression analysis with the two curricular courses in one model and together with the extra-curricular measure in a separate model. Predictability combining the final percent scores in the Human Structure and Organ Systems courses (adjusted R<sup>2</sup>=0.61) was noted as marginally better than that from the Organ Systems alone (R<sup>2</sup> change=0.018, F change=30.17, p<0.001). However, using the score on the CBSE as an additional predictor along with both the curricular courses, a total of 69% of variance in the USMLE scores could be explained (R<sup>2</sup> change=0.085, F change=180.93, p<0.001). All three measures significantly contributed to the overall predictability. No difference in the R<sup>2</sup> value was noted in separate regression models that used the standardized scores or with the academic year as an additional variable. Use of the quadratic and interaction terms did not significantly contribute to the final models.

Table 3.

Multiple regression predicting the USMLE Step 1 score\*

MODEL	$\beta$	95% CI	p-value	Adj. R <sup>2</sup> (%), Intercept	Power	Standardized estimate
Organ Systems	1.97	1.76-2.19	<0.001	61.2, 4.14	0.99	0.631
Human Structure	0.57	0.37-0.77	<0.001			0.193
Organ Systems	1.48	1.27-1.69	<0.001	69.7, -4.29	0.99	0.474
Human Structure	0.31	0.13-0.49	0.001			0.107
CBSE	1.11	0.95-1.27	<0.001			0.369

\*All regression models were significant at the 0.01 level (2 sided)  
 $\beta$  = Regression coefficient; CI = confidence interval; R<sup>2</sup> = Coefficient of determination

With information from the regression analysis comprising all three predictors, an equation to obtain predicted USMLE Step 1 score was derived as follows: Predicted USMLE Step1 score = 1.48 (Organ Systems %) + 0.31 (Human Structure %) + 1.11 (CBSE raw score) - 4.29. Using this equation nearly 70% of the variability in the USMLE Step 1 score could be predicted.

### Discussion

In this study, performance of students in two curricular courses and the comprehensive basic science examination was used to predict the USMLE Step 1 scores. To the best of our knowledge this is the first study to utilize a system-based curricular course such as Organ Systems to predict Step 1 performance. Our hypothesis was that the final percent achieved in the two curricular courses that have the highest failure rates in the pre-clinical curriculum at our institution would be good predictors of Step 1 performance. In addition, we selected the CBSE, a commercially available test that evaluates basic science knowledge, as an extracurricular predictor of Step 1 performance.

Results of this study demonstrated that all the evaluated measures were statistically significant predictors of USMLE Step 1 performance. Of the two pre-clinical courses in the College of Medicine curriculum, the final percent score in the Organ Systems course was a better predictor of USMLE Step 1 performance than that in the Human Structure course. At our institution, the Human Structure course is included in the first year curriculum while the Organ Systems course is part of the second year curriculum. The difference between the two curricular courses as predictors could be attributed partly to the distinct order in which the courses are offered in the pre-clinical years of medical education. Our findings also verify that the USMLE Step 1 practice test, CBSE, was a good independent predictor of Step 1 performance. The variability in the Step 1 scores explained by the CBSE in our study was similar to that reported in other studies (Elam & Johnson, 1994).

As single predictors, the final percent scores in the Organ Systems explained the maximum variability in Step 1 performance followed by the CBSE scores and the final percent scores in the Human Structure course. It can be suggested that along with the Step 1 practice tests, student achievement in the curriculum could be used to predict performance on the USMLE Step 1 examination. Combining the students' performance on the CBSE and in their two curricular courses increased the ability to predict USMLE performance and explained approximately 70% of total variance in the USMLE scores. This result suggests that institutional courses are good predictors of student performance on national standardized tests, and it is plausible that the teaching methodologies, format of the course, and/or learning methods in these courses play an indirect but significant role in the prediction.

Recognition of curricular courses as predictors of USMLE Step 1 performance has several implications. It provides an opportunity for the educational authorities and committees at medical institutions to direct existing resources or dedicate additional efforts to improve students' performance in these courses, thereby ensuring better performance on the USMLE Step 1. With institution-specific prediction models using curricular courses, early identification of students at risk for failing the Step 1 could be possible. This provides an opportunity to intervene appropriately via intensive study strategies, tutoring and/or review programs that promise better USMLE Step 1 performance from the students.

Past research has suggested several different predictors of USMLE Step 1 performance including age, gender, race, learning style of the students, and preadmission variables such as entry level grade point average, undergraduate grades, MCAT performance, etc (Basco, Way, Gilbert & Hudson, 2002; Case, Becker & Swanson, 1993; Elam & Johnson, 1994; Kleshinski, Khuder, Shapiro & Gold, 2007; Koenig, Sireci & Wiley, 1998; Lynch, Woelfl, Steele & Hanssen, 1998; Wiley & Koenig, 1996). We acknowledge that our study lacks information on these predictors; however, earlier studies have indicated that many of these variables predict students' performance in the pre-clinical years of medical education (Haist, Wilson, Elam, Blue & Fosson, 2000; Höschl & Kozeny, 1997; Julian, 2005). Therefore, it is plausible to assume that the observed predictability of basic science curricular courses in this study is influenced by other predictors as indicated above. Nevertheless, a student's performance in the curricular courses could serve as a convenient, reliable,

and convincing predictor of the USMLE Step 1 score. Other limitations of this study are that the data included in the analysis was from a single medical institution, and the sequence in which the two curricular courses are offered to the students could have influenced the predictions. As specified earlier, the basis for selecting the Organ Systems and Human Structure courses in our analysis was the high failure rate noted among the students over the past five years. A lack of variability in students' performance in the other courses of the first and second year curriculum accounted for their exclusion in this study. One of the strengths of this study includes a large sample of medical students included from multiple consecutive academic years. In addition, performance on the USMLE Step 1 was assessed by the actual score on the test with linear data analysis, not by pass or fail based on a cutoff score.

### **Implications and Further Study**

Implications of this study can be directed towards the role of learning centers in academic institutions, their influence on student performance in curricular courses, and ultimately on the national licensure examinations. Future research efforts should focus on developing strategies that improve student curricular performance and methods to evaluate their outcome on the standardized examination.

### **Conclusion**

Our study supports that select pre-clinical curricular courses of medical education are convenient and good predictors of student performance on the USMLE Step 1. Efforts for improving student performance in these courses will culminate in better performance on the standardized licensing examination. Some of the techniques that could potentially improve student curricular performance are the following: types of tutoring (supplemental instruction, structured learning assistance programs, individual and group tutoring) and a variety of teaching methods that take into account multiple types of learning styles. Additionally, this would also increase students' self-esteem, self-confidence, and future accomplishment throughout their medical careers. Student success on the USMLE Step 1 improves the overall institutional performance which is important for accreditation of medical schools by the Liaison Committee for Medical Education, as well as for the ability of the institution to attract highly qualified students and residents.

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# Book Review:

## *Equity and Excellence in American Higher Education*

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Bowen, W. G., Kurzweil, M.A., & Tobin, M. E. (2005). *Equity and Excellence in American Higher Education*. Charlottesville, VA: University of Virginia Press.

**REVIEWED BY JOAN E. DILLON, BLOOMSBURG UNIVERISTY**

This book evolved from a study of excellence and equity in higher education in response to an invitation given to one of the authors, William Bowen, to speak on the subject as a Thomas Jefferson Foundation Distinguished Lecturer at the University of Virginia in 2004. What was found through the research conducted is that there is an imbalance in attitudes toward excellence and equity in higher education. While most value the high quality of American higher education, "the question of fairness in its provision engenders passionate and divisive debate" (Bowen, Kurzweil, & Tobin, 2005, p.1). To answer questions regarding excellence, equity, and their interaction; historical research, detailed analysis of data, and a wide review of literature was conducted.

The first chapter examines the definition of excellence in terms of what our system of higher education wishes to accomplish by looking at its root purposes. In every setting throughout history this has been to prepare young people to be productive members of society although the focus has been shaped and altered by historical circumstances. The best students often are recipients of financial aid, but unless it can help much larger numbers of poor and historically underrepresented students have access and success, the American system runs the risk of losing its prestigious position. The authors make the argument for the essential value of diversity in our schools for both our higher education institutions' benefit and our society at large with quotations from Thomas Jefferson and others to support their argument in this chapter.

The focus of the second chapter traces the equity-excellence relationships in higher education from the inception of the institution through World War II, examining its many exclusionary practices throughout that time frame. The "Cold War" years precipitated a renewed commitment to higher educational standards with impressive gains in higher education accomplished and challenges noted as well. The capacity of our system to educate increasing numbers of our own citizens from historically underrepresented groups or poor families is one. Other challenges discussed in Chapter 3 include global competition for foreign students, a diminished number of US doctorates,

and severe problems at the K-12 level that impact entrance into, among others, science and technology fields. The authors conclude that the answer to continued excellence in our system is through the attainment of equity objectives.

The impact of limited access specifically from families in the lowest income bracket or without prior college experience in higher education is explored in Chapter 4. While explicit policies barring access to certain groups have been eradicated, more insidious forms, such as under preparedness, lack of information, and financial hardship, are prevalent for the socioeconomically disadvantaged. Although admission rates have improved, generally poor students come from poorly funded schools, and the resulting impact on college preparedness precludes equal access. Even for better prepared students, socioeconomic status is a huge factor in enrollment in selective and other higher education institutions.

The relationship between socioeconomic status and the 19 most selective schools is further investigated in Chapter 5 in terms of whether they are “engines of opportunity” or “bastions of privilege.” Most of these schools have made efforts to disseminate admissions information and recruit from disadvantaged groups, but the findings of the research indicate that although well prepared students from poor families or lacking prior higher educational experience are likely to be treated fairly in the admissions process, the chances of them getting into the pool are slim and their numbers are small.

The second part of the book deals with where to go from here starting with a discussion of race and issues surrounding affirmative action in admissions as well as the consequences on equity and excellence in higher education. One riveting detail notes that when Charles E. Houston, former Dean of Harvard Law School, who was instrumental in working to develop the *Brown v. Board of Education* legislation, served on the US Supreme Court, he could not eat in the whites only cafeteria that served the Court. Following a discussion of the positive impact of Affirmative Action for minority students and the controversy as well, the authors note that achievement gaps persist mainly due to the quality of K-12 schools attended by historically underrepresented minority students. There is a resulting need for colleges and universities to address this problem through research based programs while reducing the need for racial preferences. In my opinion, developing “sensible ways” needs to be explored more specifically.

Blind admission policies are fully in effect at all but four of the nineteen most prestigious schools. These policies, which pay no attention to a students’ ability to pay in determining admission, are discussed in Chapter 7 in light of advantages given to other groups. The authors suggest that some preference should be given to qualified applicants of low income as well and suggest ways to do this. I believe needs-based financial support must be readily available for these students to attend these schools without excessive financial hardship and the pursuant burden of post-graduate debt.

Following Chapter 8, which deals mostly with government policies, Chapter 9 is devoted to improving college preparedness as a national policy inside and outside of the K-12 schoolhouse. I didn’t agree with their opinions about school choice and would have liked to see in this chapter more about



what colleges and universities can do to help the underprepared students once they have arrived on campus. Furthermore, the majority of inner-city students would not be able to participate in school choice. I feel we need to address the problems in our society that lead to the paucity of resources and proliferation of problems in our inner city schools proactively to improve the preparedness of the majority of students rather than abandoning the schools where most of the students will remain.

I found this book very interesting and agree with the thesis that excellence and equity in higher education are co-dependent. This book makes a great case for strengthening equity as a means to excellence. One excellent quotation by Thomas Jefferson made in 1820, cited by the authors, states, "I know no safe depository of the ultimate powers of the society but the people themselves; and if we think them not enlightened enough to exercise their control with a wholesome discretion, the remedy is not to take it from them, but to inform their discretion by education. This is the true corrective of abuses of constitutional power" (as cited by Bowen, Kurzweil, & Tobin, 2005, p. 2). I was disappointed to see a negative reference to remedial programs. Most schools don't use that term anymore. As a person who works in a program that provides access and support for students who have traditionally been under-represented in higher education at a four-year state university, I was very impressed with the authors' case for equity, but felt it fell short in real ways to help the students who are underprepared when they reach college. Once they are there, real equity means finding real ways to keep them.



# Book Review: *Five Minds for the Future: Cultivating Minds to Thrive for the Road Ahead*

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Gardner, H. (2006). *Five Minds for the Future: Cultivating Minds to Thrive for the Road Ahead*. Boston, MA: Harvard Business

**REVIEWED BY LOREN KLEINMAN, BERKELEY COLLEGE**

“**T**he survival and thriving of our species will depend on our nurturing of potentials that are distinctly human,” says Howard Gardner (2006, p. 167). In his book *Five Minds for the Future*, Gardner demonstrates how our society is in inherent need of five dramatis personae in order for future survival: the disciplined mind, the synthesizing mind, the creating mind, the respectful mind, and the ethical mind. The cultivation of these minds suggest a delineation from the computational minds of today and the progression towards integrated personalities and capabilities demanded within education, the professions, and the work place. Gardner creates a deft illustration of how each mind should be implemented within management, education, and leadership capacities as well as the challenge of encouraging the growth of such minds within our schools in order to produce students who are engaged in local and global communities. Gardner asks how “do these minds work, and how can they be nurtured in learners across the age span?” (p. 2). Learning assistance centers will benefit from following and cultivating Gardner’s five minds by creating “performances of understanding” (p. 34) for students. These performances of understanding can include engaging new and returning students, establishing a trusting relationship between support professionals and students (tutees), holding learning professional staff accountable for upholding the mission and vision of the center, making the learning process available to students, and maintaining a process of accountability such as student evaluation of programming.

Gardner described the disciplined mind as one that has mastered at least one way of thinking (i.e. academic discipline or a profession). This mind works steadily over the years, slowly cultivating and improving its mastery of a discipline. “Most students,” Gardner says, “are not able to explain the phenomenon about which they are being questioned,” and as a result are not thinking in a disciplined manner (p. 21). Disciplined minds, he says, can be created in the classroom by helping students identify concepts and topics within their subject matter; spending significant time on such topics and concepts; approaching these topics and concepts in multiple ways; and setting up “performances of understanding,” or allowing students to perform their understanding of the subject in a variety of ways (p. 34). Connections must be made between subject matter and discipline. Education must move away from prior modes of instruction simply based on an answers only approach, and towards mastery. Students must view education as a stepping stone to the professions, and not as a means to just a degree.

However, Gardner warns that a disciplined mind does not alone suffice for the future. The key is to synthesize knowledge and use it in unparallel ways in order to make this connection. In the past, knowledge accumulated at adequately slow rates that it could be passed orally from generation to generation. Today, with the advent of technology such as the Internet, there is an overabundance of information communicated at much faster rates. Because of this, Gardner says, knowledge requires synthesizing. The synthesizing mind must select only the essential information from the vast amounts presented and arrange this information in ways that make sense to self and others. For example, students must synthesize information when preparing essays and assignments for an audience (i.e. the grader); and in the workplace, professionals must recognize new information, skills, and training vital to sustaining knowledge to further marketplace growth and improve current best practices. Those lacking a synthesizing mind will be inept at organization and scrutiny, choose information in random ways, and be incapable of expressing a systematic stance to self and others. Gardner outlines how synthesis entails four components: A goal or statement of purpose; a starting point on which to build; selection of strategy, method, and approach; and most importantly, drafts and feedback.

As some syntheses may be clear, Gardner says, at times, some may have a creative fate. "Going beyond existing knowledge and syntheses to pose new questions, offer new solutions, fashion works that stretch existing genres or configure new ones; [the creating mind] builds on one or more established disciplines and requires an informed field to make judgments of quality and acceptability" (p. 156). From going beyond classroom requirements in order to pose new questions to thinking outside the box in the workplace, creativity is a primary mode of formulating vision. Creativity responds to disciplined and synthesized thinking.

Conversely, Gardner explains that once people engage in creative enterprises, it is important to be concerned about their moral and ethical parameters. Beyond acceptance and political correctness, the respectful mind responds "sympathetically and constructively to differences" (p. 158) while the ethical mind is characterized as "abstracting crucial features of one's role at work and one's role as a citizen and acting consistently with those conceptualizations; striving toward good work and good citizenship" (p. 157). By promoting respect for learning through ethical parameters, both minds allow for the capacity of understanding, forgiveness, and sympathy for self and others. For example, Gardner says, that if ethics are not practiced in most facets of everyday life, the risk is both short and long term. For instance, students that continually plagiarize work in order to submit assignments by deadline may become employees that embezzle money from their own company and perhaps leaders that overstate earnings. These acts are not too Utopian, as Enron so aptly proved. Without ethics there can be no true citizenship. Ralph Nader observes more appropriately, "'Citizenship is not some part-time spasmodic affair. It's the long duty of a lifetime'" (as cited in Gardner, p. 135).

With respect to education, these are the five minds necessary for the future; Gardner says these disciplined, synthesizing, creative, respectful, and ethical minds are an integral grouping of intelligences that should not only be required of students and faculty but also practiced in support of an

overarching contribution to citizenship.

This book provides excellent new ways for learning professionals to help students bridge their thinking from “passive students” to “competent professionals.” It helps give a new dimension on how to add meaning to assignments so students think beyond the “grade” or the task at hand. Gardner presents an interesting theory that can be used to help students cross that bridge from student to professional sooner and more effectively.

One way learning assistance professionals can cultivate disciplined minds is by using “performances of understanding,” in other words, a student learning agreement, which allows students to perform their own understanding of their learning in a variety of ways. One such way could be for students to create a pre-learning assistance evaluation (not anonymous). Professionals could create a short survey, which allows the students to recognize what attributes are most important to the realization of their learning. The significance of this pre-evaluation is that learning assistance professionals can find out directly what qualities are important to students’ academic success and can use this information to start building a positive academic relationship with students. The point is to create a meaningful learning behavior where students can practice, on a regular basis, those qualities that are crucial to their academic advancement. Through this medium, assistance professionals can encourage a better understanding of what it takes to be a disciplined learner.

Learning assistance professionals could help students synthesize information when preparing essays and assignments by reinforcing that similar tasks are required in the workplace. The need continues in the workforce to sustain knowledge to further marketplace growth and improve current best practices. Learning assistance professionals could use this concept by having each student prepare a goal statement upon completion of the pre-learning assistance evaluation, similar to the four components of a goal statement that Gardner recommends. These are as follows: a goal or statement of purpose of learning; a starting point on which to build; selection of strategy, method, and approach; and most importantly, a commitment to disciplined work. By incorporating goal statements into student learning assistance, a clearer understanding of mutual commitment between the learning professional and student can be established. In a sense, a contract of academic support is created, one that is disciplined and designates how to synthesize goals into everyday practice. Not only does this type of learning assistance prepare students academically, but it prepares students to become proprietors of their own learning.

Learning assistance professionals can apply Gardner’s theory of the creative mind by encouraging students to create their own vision and mission of learning as it relates to their learning objectives. For example, learning professionals can encourage students to think beyond classroom requirements in order to pose new questions to thinking outside the box in the workplace; creativity is a primary mode of formulating vision. The contract could include details on the student’s and the professional’s commitments to the learning contract itself, academic integrity, statement of goals, and finally any moral and ethical parameters related to academics.

By using some of the practices above, coupled with program evaluation for accountability's sake, learning assistance professionals can nurture Gardner's *Five Minds for the Future* as a way to offer students opportunities to defend and maintain their conceptualizations, share vision, practice ethics with responsibility, and continue to learn with their own purpose in today's changing landscapes.

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## Pertinent Publishing Parameters

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

### Categories for Submission

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- ◆ **Topics:** *TLAR* will accept manuscripts that address our purpose: to publish scholarly articles and reviews that address issues on program design and evaluation, classroom based research, the application of theory and research to practice, innovative teaching and tutoring strategies, student assessment, etc.
- ◆ **Types:** *TLAR* will accept manuscripts following all four of the article types outlined in the American Psychological Association Manual: empirical study and articles on review, theory, and methodology. Follow APA manual (chapter 1.4) for specific requirements and structure for each type; regardless, all manuscripts need a clear focus that draws a correlation between the study, review, theory, or methodology and learning assistance practices.

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- ◆ **Idea Exchange:** Discussion directly related to articles published in *TLAR*. A more formal and in-depth extension of professional list-serves that provides a forum for networking on ideas that impact learning assistance. Submissions are limited to less than four paragraphs and are to be constructive idea exchanges. In addition to the name, title, college, and contact information from the submitter, Idea Exchange submissions are to include the details of the referenced article (title, author, and volume/number, and academic semester/year). A submission form may be found online on the *TLAR* website.
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- ◆ The second page should be an abstract of the manuscript, maximum 100 words.
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- ◆ Figures must be black and white, camera ready, according to APA style; tables should not be tab aligned.



**Please email your comments and/or article submissions to christine.reichert@utoledo.edu.**

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## NCLCA Membership Information

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### What is NCLCA?

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

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

### Join NCLCA

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

The membership year extends from October 1 through September 30. The annual dues are \$50.00. We look forward to having you as an active member of our growing organization.

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