

# Targeted Intervention for Developmental Education Students (T.I.D.E.S.)

By Hunter R. Boylan

---

*At a time when the costs of participating in postsecondary education are increasing, a very large number of undergraduates must stay in school longer.*

---

**ABSTRACT:** *This manuscript proposes a theoretical model that provides an alternative for assessing, advising, and placing underprepared students in colleges and universities. It advocates combining cognitive and affective assessment data along with information about students' personal circumstances to make more precise placement decisions via advising that targets both course and service recommendations. The article also includes a detailed description of the model and how it might be implemented. The assumption underlying this model is that although the traditional practice of placing students into remedial courses based on a single cut score on a cognitive assessment instrument is efficient, it is not necessarily effective. The use of the alternative model, referred to as "Targeted Interventions for Developmental Education Students," should enable institutions to place their underprepared students more accurately and serve them more effectively.*

Each year over 2,000,000 students enroll in developmental education courses in U.S. colleges and universities (Saxon, Sullivan, Boylan, & Forrest, 2005). Most of these students are placed in developmental courses as a result of their scores on a single cognitive assessment instrument which is used as the basis for academic advising (Gerlaugh, Thompson, Boylan, & Davis, 2007). According to a recent report from the National Center for Education Statistics (2003), most colleges report that it takes students about a year to complete their developmental education requirements.

This means that at a time when the costs of participating in postsecondary education are increasing, a very large number of undergraduates must stay in school longer and pay more in order to complete developmental course requirements. Time in developmental education is well spent for many of these students. They complete their developmental courses quickly, and their participation enables them to develop the skills necessary for success in later college-level courses. For others, their time in developmental education is fraught with the frustration of either taking courses they do not really need or

failing these courses and having to repeat them. It is possible, however, that an unknown number of the students taking these courses might either bypass them entirely or require more than coursework alone to be successful.

Students who score just under the cut score in a particular skill area might be able to bypass the developmental course in that subject, go directly into the college-level course in that subject, and be successful if they had the right kind of learning assistance services. Others at the lower end of the score distribution might need not only one or more developmental courses but also require a variety of additional learning assistance services in order to be successful. Unfortunately, conclusive research is not available regarding which students might profit from any particular combination of courses and services. A contributing factor is the lack of sufficient assessment data from enough sources to provide adequate advising information and appropriate placement for developmental students.

In U.S. colleges and universities, the assessment instruments used most widely to gather information for placement in developmental courses are ACCUPLACER™ and COMPASS® (Gerlaugh, Thompson, Boylan, & Davis, 2007). ACCUPLACER is published by the College Board and COMPASS is published by ACT. Both are computer-adaptive instruments which adjust the difficulty of follow-up questions based on students' responses to the previous question. This assessment technology is designed to provide an accurate measure of how much a given student knows about a particular area such as reading, English, or mathematics. Because such assessment instruments measure students' cognitive abilities, they are referred to as cognitive instruments.

As accurate as these instruments may be in assessing cognitive skills, however, they do not measure other factors that are equally important to student success. These factors include such things as attitude toward learning, motivation, autonomy, willingness to seek and accept help, desire to affiliate with peers or instructors, or willingness to expend effort on academic tasks (Sedlacek, 2004). These factors are generally referred to as noncognitive or affective character-

Hunter R. Boylan  
Director  
National Center for Developmental Education  
Appalachian State University  
Boone, NC 28608  
boylanhr@appstate.edu

istics because they measure how students feel or what they believe about themselves and learning (Bloom, 1976). Most college and university instructors would agree that these factors are as essential to success in college as are cognitive skills. In fact, Bloom (1976) estimates that at least 25% of how well a student performs in a particular course is related to affective factors. Sedlacek (2004) argues that the weaker a student's cognitive skills, the more important other affective factors in student success.

In addition to cognitive and affective factors, a variety of personal factors also influence students' likelihood of success in college. These factors would include information such as the number of hours students are employed per week, their eligibility for financial aid, the extent to which students have other adult responsibilities such as child care, or whether or not they are native speakers of English (Long, 2008; McCabe, 2003). Such factors influence the amount of time and attention students have available to attend courses, do homework, and study.

It is reasonable to assume that placement of developmental students could be improved if colleges and universities utilized multiple variables in assessing and advising their incoming students. In fact, Martha Maxwell (1997) has argued that colleges and universities should take a much greater and more varied amount of information into account when placing students into courses. McCabe (2003) argues that multiple variables such as cognitive and affective information should be used in the placement process for developmental students because they complement each other and allow the institution to view students holistically. However, a recent survey of community college developmental programs indicated that only 7% collect both cognitive and affective information on their students for placement purposes (Gerlaugh, et al., 2007). A similar survey has not been conducted for universities; information regarding how many colleges and universities may use students' personal information to make placement decisions is also unavailable.

It is also reasonable to assume that advising and placement decisions could be improved if advisors were able to use a combination of cognitive, affective, and personal information about students to develop more integrated intervention plans for underprepared students. This is particularly true if these plans took advantage of and were based upon the variety of both developmental courses and learning assistance services available on their campuses (Muraskin & Lee, 2004).

This article proposes and describes an innovative model for using a combination of cognitive, affective, and personal information to

target a variety of course-based and learning assistance-based interventions for developmental students. It is grounded in the theoretical work of several scholars of adult development and learning, most notably Arthur Chickering, Erik Erikson, and other more contemporary scholars. Most developmental theorists, for instance, argue that human beings develop as a result of some interaction between themselves and their environment and that the greater the variety of experiences within the environment the more development is likely to take place (Fischer, 1980; King & Kitchener, 1994). The model presented here expands the range of interventions and subsequent experiences of developmental students in a collegial environment.

In his classic work, *Education and Identity*, Chickering (1969) proposed that in order to be successful adults and/or college students it was necessary for individuals to develop in seven critical areas which he referred to as "vectors." Chickering proposed that academic coursework

---

*The weaker a student's cognitive skills, the more important other affective factors are in student success.*

---

promoted individual development along many of these vectors and that experiences, such as belonging to clubs or participating in community service, promoted development in others.

Erikson (1968) postulated that the passage from youth to adulthood is marked by development of individual identity. In Erikson's view, this identity development is promoted through opportunities available in college to clarify interests, skills, and attitudes; experiment with different roles; make choices; experience achievement; overcome anxiety; and engage in reflection and introspection.

Both Chickering and Erikson agree that the college experience provides extremely fertile ground for individual development. The collegiate experience offers an array of coursework, interaction with peers and instructors, as well as extracurricular programs and opportunities that contribute to student academic and personal development. These experiences could be of great value to developmental students, who may be delayed in their individual development. Unfortunately, most postsecondary institutions have not organized their assessment, advising, and placement processes in such a way as to promote maximum individual development, either

academic or personal. The model proposed here organizes the assessment, advising, and placement process in a manner designed to promote the greatest amount of development for at-risk and underprepared college students. It does this by guiding students to participate in a variety of interventions designed to promote cognitive and affective development along with practical, real-world support.

The model is referred to as Targeted Interventions for Developmental Education Students or "T.I.D.E.S." because it uses an expanded database—including cognitive, affective, and personal information—that enables academic advisors to specifically target appropriate interventions for students. Using this model, some students who currently place into developmental courses may be exempted from them whereas others may receive more intense and precisely focused interventions.

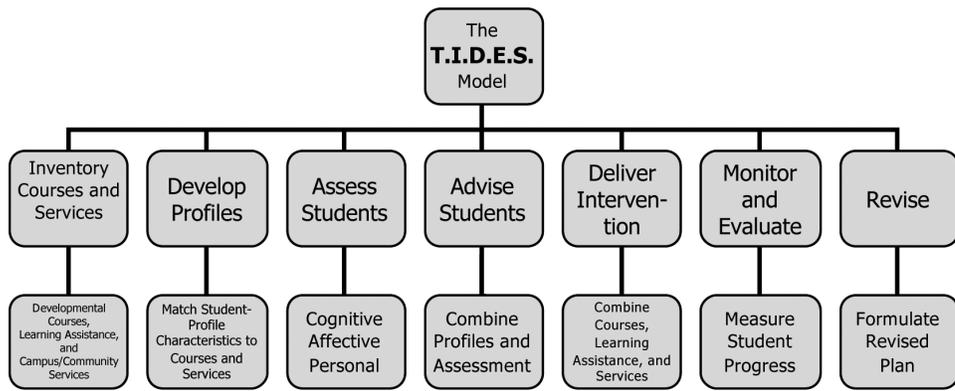
### The T.I.D.E.S. Model

The basic method of T.I.D.E.S. is to gather a variety of assessment information to help academic advisors not only place students in courses but also place them in experiences that will either supplement or replace developmental courses. In order to implement the T.I.D.E.S. model several steps must be taken. These steps include the following:

- taking an inventory of available campus and community courses and services,
- developing student profiles to determine the types of services that might be helpful to students with various characteristics,
- assessing individual students' skills and characteristics,
- advising students using this assessment information to plan interventions,
- delivering targeted interventions according to the plan,
- monitoring students and evaluating their progress, and
- revising the targeted interventions as necessary (see Figure 1, p. 16).

### Taking Inventory

Several researchers have pointed out that the availability of comprehensive learning assistance and support services contributes to the success of underprepared college students (Kiemig, 1983; McCabe, 2000; Schwartz & Jenkins, 2007). The first step in the T.I.D.E.S. model, therefore, is to take an inventory of the courses, learning assistance, and other campus services available to students at a particular institu-



**Figure 1. Diagram outlining various steps and details of the Targeted Interventions for Developmental Education Students model.**

tion. This list might include such things as the number of levels and content of developmental courses and available services such as tutoring, counseling, Supplemental Instruction, learning communities, freshman seminars, student success courses, short-term workshops, and peer or professional mentoring.

This inventory might also include a more diverse or far-reaching range of campus or community services such as occupational assessment, child care, job counseling and placement, crisis intervention, or spiritual advising. In conducting this inventory, it is important to view the entire campus as well as community service agencies as potential providers of support for students, thus increasing the comprehensiveness of service options available to students.

Once this inventory has been completed, a list of courses and services available to students can be developed. It should describe the services and provide contact information that may be used by advisors and students. This list represents the available interventions that might be targeted to assist students on a particular campus and through local community service agencies. Developing this list and keeping it updated is critical to the success of the model because the list forms the basis for the provision of a comprehensive set of courses and services to students based on their individual characteristics.

### Developing Student Profiles

Developing profiles of student types involves analyzing students' cognitive, affective, and personal characteristics and matching them to the available courses and services identified in the inventory process. Initially, this process would involve some guesswork regarding student characteristics and the interventions that might be appropriate based on these characteristics. These profiles would represent the first "best guesses" of developmental educators as to what

combinations of courses and experiences might effectively meet the needs of individual students. The profiles would then be used to plan the best combinations of courses and experiences that

*Appropriate student profiles cannot be developed unless assessment activities include the collection of all three types of information.*

might be targeted to student with various characteristics. Not only would students who score at various points on the assessment instrument receive different treatments but students with similar cognitive scores might also be assigned to very different courses and experiences depending on the affective characteristics of their profile. Consider the following examples.

*Janice is an 18-year old African-American student who recently graduated from high school with a 3.2 GPA. Her cognitive assessment indicates that she missed placing into college algebra (first college-level course at her community college) by five points. Her affective assessment indicates that she is highly motivated, seeks help willingly, and uses good study strategies. Her personal information indicates that she works only 10 hours a week, has no children, and is living at home with her parents. It might be that such a student could enroll in college algebra and be successful if she also had regular tutoring for college algebra.*

*Roberto is a 26-year-old Hispanic student who has just been released from active military service and is attending the local community college. He, too, missed the cut score for placement into college algebra by five points. His affective assessment indicates that he is highly motivated and well*

*disciplined. His personal information indicates that he is married, has one child, and works 20 hours a week. Because he is well-disciplined and motivated but has been out of high school for 8 years, it might be that he could take an "accelerated" 5-week developmental mathematics course online and obtain the preparation he needs rather than having to spend 16 weeks in developmental mathematics. A T.I.D.E.S. advisor might check Roberto's high school algebra grades to further inform his potential placement in an intensive algebra preparation section.*

*Joseph is a 22-year-old white student who dropped out of high school, went to work in a local textile mill when he was eighteen, and completed his GED when he was nineteen. He was laid off when the textile mill closed and has now returned to college to retrain. He, too, missed the cut score for placement into college algebra by five points. His affective assessment information indicates that he has low motivation, poor study skills, a negative attitude about education, and anxiety about returning to school. His personal information indicates that he is married, has three children, and is working part-time for 10 hours per week. It might be hypothesized that Joseph could best be placed in a developmental mathematics course in a learning community and receive regular counseling to facilitate his adjustment to college.*

In order to implement the T.I.D.E.S. model, developmental educators and academic advisors would work together to use a series of profiles and hypothetical responses such as these as a guide to planning advisement and placement of students. Academic advisors would then use the combination of students' profiles and hypothetical responses as guidelines to place individual students into a variety of courses and experiences more accurately tailored to their academic needs and characteristics. Although no one has yet implemented this model in its entirety, research by Jenkins (2006) and Muraskin and Lee (2004) indicates that such planned advising and integrated interventions should contribute to improved academic performance on the part of underprepared students.

### Assessing Students

Researchers in the field agree that mandatory assessment is a characteristic of successful developmental programs (McCabe, 2000; Morante, 1989; Roueche & Roueche, 1999). One of the keys to successfully implementing the T.I.D.E.S. model is strengthening the accuracy of assessment by using multiple variables to triangulate cognitive, affective, and personal; this approach yields a more meaningful and balanced student profile. Appropriate student profiles cannot be developed unless assessment activities include

the collection of all three types of information.

Practically all colleges and universities in the United States conduct cognitive assessment of incoming students (National Center for Education Statistics, 2003). Many of these institutions also collect personal information about students as part of the assessment and advising process (Gerlaugh, et al, 2007). As noted earlier, however, few also use affective measures in the assessment, advising, and placement process.

Fortunately, most of the computer-adaptive cognitive assessment instruments used by colleges and universities also allow institutions to include additional questions or instruments as part of the assessment battery. This feature permits institutions to gather additional affective and personal information during the initial assessment process in a cost-effective manner.

There are a variety of affective assessment measures available that might be included in the initial computerized assessment process. Some of the more widely used are described in the Appendix. Most of these instruments are computer scored and would add only 30 to 45 minutes to the initial assessment process. Such measures provide information on a range of affective characteristics such as motivation, attitude toward learning, help-seeking behavior, autonomy, anxiety, desire for peer or instructor affiliation, self-efficacy, and/or willingness to expend effort on academic tasks.

Within the guidelines of students' right to privacy, additional personal information may be obtained from application information, questions included in the initial assessment process, or questions asked by academic advisors during the advising process. Through these methods, additional information on students—such as number of hours of employment, family responsibilities, or military status—can be obtained, and this information will increase the precision of the assessment process.

### **Advising Students**

There is a substantial body of research and literature indicating that academic advising is essential to the success of developmental education activities (Boylan, 2002; Casazza & Silverman, 1996; Center for Student Success, 2007; Jenkins, 2006; Maxwell, 1997). Thoughtful and informed academic advising is critical to implementing the T.I.D.E.S. model. In order to implement it effectively, advisors must not only use their current knowledge about the institution's cognitive assessment instruments relative to required courses in a student's program of study, they must also become familiar with interpreting data from affective assessments while understanding the impact of students' personal characteristics on academic performance. This will

require a considerable amount of retraining for academic advisors. They should, for instance, take the affective instruments themselves to understand the questions asked and how they are used to generate scores. They should also read the technical data for the cognitive and affective instruments they will use in order to develop a full understanding of what these scores mean and how they should be interpreted to students and in relation to the overall placement process.

In addition, advisors should know what information on students' personal characteristics is obtained and how it is obtained as well as the various ways in which this information might be interpreted. They should, for instance, be familiar with the limitations regarding accuracy of students' self-reported information and know what additional questions to ask during individual advising in order to validate and supplement this information. They should also know how to collect this information within the boundaries of students' privacy rights.

---

## *Student monitoring, therefore, becomes an essential part of providing targeted interventions.*

---

It is also essential that academic advisors know what courses are available to place students into; fortunately, advisors are expected to be among the most knowledgeable people in this regard on many campuses. In addition, they must be completely familiar with the various interventions available through campus learning assistance and support services in order to target these appropriately. Furthermore, they must also be aware of other campus and community resources such as day care, mental health counseling, or family services. For some students, an appropriate set of targeted interventions might also include participation in these types of services. For these reasons, it is vitally important that academic advisors be thoroughly involved in both taking inventory of campus and community services and in developing student profiles and integrating them with interventions.

Implementing this process will involve not only additional training but additional time and effort for academic advisors involved with T.I.D.E.S. The process requires that advisors combine data from a variety of sources to develop a plan for targeted interventions with individual students. This plan then forms the basis, or protocol, for the academic advising process.

Advisors must also be able to convince stu-

dents that participating in this particular set of interventions is in their best interests. As research by Gerlaugh, et al (2007) indicates, recommended placement based on assessment is not necessarily mandatory at many colleges and universities. Furthermore, as Bailey, Jeong, and Cho (2008) have pointed out, even when placement is supposedly mandatory, a large number of underprepared students manage to avoid taking the courses into which placement assessments indicate they should be placed. Consequently, depending upon the policies of a particular institution, T.I.D.E.S. advisors will have to recommend, strongly encourage, or mandate that students participate in targeted interventions and work to ensure that these recommendations, encouragements, or mandates are followed by students.

Given the amount of training required and the time involved in targeting interventions based on cognitive, affective, and personal information, it may be advisable for larger institutions to begin by training a small number of advisors who work specifically with underprepared students. These advisors might then work with a specific subset of incoming students who are considered to be most at risk and provide them with targeted interventions. As more experience is gained in targeting interventions, the number of advisors to be trained and the number of students to be served might be increased.

### **Providing Interventions**

Once a set of targeted interventions has been established for a particular student, it will also be necessary to insure that the student is able to take advantage of and follow through with them. Sometimes this may involve referring a student to other services and insuring that the referral is acted upon. This may require making appointments for students with other campus service providers and following up to make sure the appointments are kept. It may also require helping students develop schedules or time management programs that will enable them to fully participate in targeted interventions. Frequently, it may require monitoring students to insure that they actually participate in the targeted interventions recommended by an academic advisor. This process may be facilitated through the use of computerized databases and spreadsheets on student characteristics and interventions.

Boylan, who coined the term "academic intervention" (1980, p. 9), pointed out that successful intervention requires consistent follow-up monitoring of students subsequent to initial contact. Student monitoring, therefore, becomes an essential part of providing targeted interventions. Some sort of feedback system will be necessary to insure that students are actually

participating in the interventions targeted for them. Such monitoring is a best practice in developmental education in any event and should be part of a comprehensive developmental program (Boylan, 2002; Center for Student Success, 2007; Continuous Quality Improvement Network, 2000).

This monitoring might be accomplished by academic advisors, by learning center personnel, by faculty teaching the courses that are part of the targeted intervention process, by peer mentors, or by a combination of professionals. Boylan (2002) and Boylan and Saxon (2005) report that student monitoring is a key component in promoting success for developmental students. Bordes and Aredondo (2005) further report that peer mentoring programs that monitor student classroom attendance as well as encourage their engagement with the institution are particularly effective for Hispanic students. Many other authors argue that various forms of peer and professional mentoring can have positive outcomes for all developmental students (Center for Student Success, 2007; Kuh, Kinzie, Schuh, & Whitt, 2005; McCabe, 2000).

### **Monitoring and Evaluating**

In the T.I.D.E.S. model the bases for placing students in targeted interventions is a collection of profiles coordinated with interventions that are based on the informed judgment of developmental education professionals. Therefore careful monitoring and evaluation of student performance in targeted interventions is necessary to assess the efficacy of these informed judgments. Monitoring and evaluation will help to determine whether or not the profiles used to place students are accurate. If they are accurate, student performance in courses and retention will improve as well as students' attitudes, time-management, and other affective characteristics. If this improvement does not occur then the profiles used to place students in targeted interventions need to be revised. There will, no doubt, be a period of experimentation and trial and error involved in implementing the T.I.D.E.S. model, but such a period of experimentation and evaluation should accompany any change in the process of providing courses and services to underprepared students (Maxwell, 1997; McCabe, 2000).

It is recommended, therefore, that baseline data be established for student performance in courses and retention prior to implementing the model. This baseline data provides a standard of performance that may be used to measure the extent to which the T.I.D.E.S. model is contributing to student success. To accomplish this, data should be collected from the 3 years previous to T.I.D.E.S. implementation in the areas of

- percentage of incoming students placed into developmental courses,
- student completion rates in developmental courses,
- student pass rates in developmental courses (C or better),
- first-semester retention for developmental students, and
- grades in the first college-level course in a particular subject following completion of the developmental education sequence in that subject.

The data from these areas over the past 3 years should be averaged to determine a baseline of student performance and retention. This examination will help determine if performance and retention will improve over the baseline performance data for students who have received targeted interventions.

---

*Profiles for students with particular characteristics and plans used for implementation of the T.I.D.E.S. model will be dynamic rather than static.*

---

### **Revising Profiles and Interventions**

As students participate in the T.I.D.E.S. model, baseline quantitative information will become available on student performance. This data will help determine the interventions most likely to result in success for particular students.

Qualitative evaluation should also be collected as part of this process. Students participating in the T.I.D.E.S. model should be interviewed to gather qualitative data on the extent to which they considered the targeted interventions in which they participated to be helpful. Feedback from such interviews in combination with quantitative data will be useful in refining and modifying the profiles on which targeted interventions are based.

Advisors will initially be working with profiles regarding the combination of courses and services that is likely to work best for individual students. The evaluation process provides quantitative and qualitative data to evaluate, refine, and validate these profiles. It is unlikely that the evaluation process will validate all profiles and plans for targeted interventions. Those that are validated should be continued, and those that are not should be revised.

It is important to note that whatever initial set of profiles are developed to plan targeted interventions will, no doubt, have to be revised based on data and experience. In essence, profiles for students with particular characteristics and plans used for implementation of the T.I.D.E.S. model will be dynamic rather than static. These profiles and plans for targeted interventions will be revised and, through such revision and fine tuning, new and accurate sets of integrated advising and intervention models will eventually be identified for most underprepared students at a particular institution. As a part of this revision process, campus and community resources and services should be monitored regularly to identify new services and delete those that may no longer be available.

## **Advantages and Disadvantages of the Model**

### **Advantages**

A primary advantage of the T.I.D.E.S. model is that it deliberately attempts to reduce the number of students taking developmental courses by placing as many students as possible directly into college-level courses with appropriate learning assistance and support services. For these students, the time spent in developmental courses is reduced. The time and resources saved on these students can then be reinvested into other students who require more comprehensive interventions.

Another advantage of the T.I.D.E.S. model is that it does not necessarily require that any new courses or services be added. The model takes advantage of courses and services that are already present. It should be noted, however, that the more comprehensive the available courses and services, the more sophisticated the possibilities for targeting interventions.

A very important advantage of this model is that it is based on activities already supported in the research and literature of the field as contributing to student success. Because of this it is unlikely that using this model will hinder student progress in developmental and college-level courses or increase attrition. In fact, it is quite possible that it will improve student performance and retention because, when properly implemented, it will insure that students' cognitive, affective, and personal characteristics are accommodated in a manner surpassing the current state of the art in developmental education.

The T.I.D.E.S. model is also advantageous in that it systematizes the interventions applied to help developmental students be successful. The author believes that many current models of de-

CONTINUED ON PAGE 20

velopmental education are more or less random. Students are systematically placed in courses based on their cognitive skills, but the available learning assistance and other support services are usually accessed randomly by students. Some developmental students find their way to tutoring or study strategies courses or freshman seminars or learning communities, and some do not. The T.I.D.E.S. model insures that the students most in need of particular services receive them as part of an integrated package of assessment, advising, and intervention.

### Disadvantages

Not all campuses will be able to implement the T.I.D.E.S. model. The model requires a comprehensive array of courses, learning assistance, and other support services. It also involves the use of community service resources which will be available to various degrees in different communities.

A further disadvantage of the model is that institutions and their students already invest a great deal of time and money in assessment. Implementing this model will require an increase in that investment on the part of the institution. The institution will have to purchase additional assessment instruments, and the administration of additional assessment will take additional time and expense. To a certain extent, the monetary investment can be reduced by using some of the most valid and reliable public domain affective assessment instruments.

Another disadvantage is that using more sources of information for advising and discussing more options with students will add to the amount of time that will be required for both students and advisors. This may require adding more advisors, starting the advising process earlier, or revising orientation procedures. However, it is also likely that, at some point after the model has been implemented and evaluated, time can be saved by establishing computerized formulas using assessment data and profiles to place students in targeted interventions and standardized procedures for monitoring participation.

To some extent, these disadvantages might be balanced by increased student performance, retention, and satisfaction. All these, of course, will result in cost benefits for both the institution and its students. But it will, nevertheless, take time for this balance to become apparent. Furthermore, although eventual cost savings are likely to result from implementation of the T.I.D.E.S. model, this should not be the primary reason for using it.

## Conclusion

As Robert McCabe (2003) argues, the number of underprepared students entering colleges and universities is unlikely to decrease in the foreseeable future. Postsecondary institutions must serve the students they have, not those they wish they had, and they must serve these students through some sort of developmental education. Acknowledging that the need for developmental education is likely to be present for some time, professionals have an obligation to search for ways to provide it in the most effective manner.

Bailey (2008) argues that, even for students with similar placement scores, different types of intervention may be required to prepare them for college-level work. The T.I.D.E.S. model provides for different types of intervention for students with different characteristics. It is grounded in research and provides a structure and a methodology that enables developmental education professionals to more accurately place

---

*Postsecondary institutions must serve the students they have, not those they wish they had.*

---

students in courses and services and use these courses and services in a more systematic manner. The model requires revising assessment, advising, and placement procedures and targeting interventions to specific student characteristics rather than haphazardly assigning students to interventions. It is a model that not only requires but also acknowledges the informed professional judgment of well trained developmental educators. Most importantly, however, is that it is a model that will save time in developmental courses for some students while ensuring that others receive the services and support most likely to contribute to their success.

## References

Bailey, T. (2008). *Challenge and opportunity: Re-thinking the role and function of developmental education in community college* (CCRC Working Paper No. 14). New York: Community College Research Center, Teachers College, Columbia University.

Bailey, T., Jeong, D., & Cho, S.-W. (2008). *Referral, enrollment, and completion of developmental education sequences in community colleges* (CCRC Working Paper No. 15). New York: Community College Research Center, Teachers College, Columbia University.

Bloom, B. (1976). *Human characteristics and school learning*. New York: McGraw-Hill.

Bordes, V., & Aredondo, P. (2005). Mentoring and 1st-year Latina/Chicano college students. *Journal of Hispanic Higher Education*, 4(2), 114-133.

Boylan, H. (1980). Academic intervention in developmental education. *Journal of Developmental & Remedial Education*, 3(1), 9-11.

Boylan, H. (2002). *What works: Research-based best practices in developmental education*. Boone, NC: Continuous Quality Improvement Network/National Center for Developmental Education.

Boylan, H., & Saxon, D.P. (2005). *Affirmation and discovery: A review of developmental education in Texas community colleges*. Austin, TX: Texas Association of Community Colleges.

Casazza, M., & Silverman, S. (1996). *Learning assistance and developmental education*. San Francisco: Jossey-Bass.

Center for Student Success. (2007). *Basic skills as a foundation for success in California community colleges*. Sacramento, CA: Center for Student Success, The Research and Planning Group of the California Community Colleges.

Continuous Quality Improvement Network/American Productivity and Quality Center. (2000). *Benchmarking best practices in developmental education*. Houston, TX: American Productivity and Quality Center.

Chickering, A. (1969). *Education and identity*. San Francisco: Jossey-Bass.

Erickson, E. (1968). *Identity, youth, and crisis*. New York: W.W. Norton & Co.

Fischer, K. (1980). A theory of cognitive development: The control and construction of hierarchies of skills. *Psychological Review*, 87(6), 477-531.

Gerlaugh, K., Thompson, L., Boylan, H., & Davis, H. (2007). National study of developmental education II: Baseline data for community colleges. *Research in Developmental Education*, 20(4), 1-4.

Jenkins, D. (2006). *What community college management practices are effective in promoting student success? A study of high- and low-impact institutions*. New York: Community College Research Center, Columbia University.

Kiemig, R. (1983). *Raising academic standards: A guide to learning improvement*. Washington, DC: Association for the Study of Higher Education.

King, P., & Kitchener, K. (1994). *Developing reflective judgment*. San Francisco: Jossey-Bass.

Kuh, G., Kinzie, J., Schuh, J., & Whitt, E. (2005). *Student success in college: Creating conditions that matter*. San Francisco: Jossey-Bass.

Long, B. (2008). *What is known about the impact*

CONTINUED ON PAGE 22

## Appendix

## Commonly Used Affective Assessment Instruments

- of financial aid: Implications for policy. New York: Columbia University, National Center for Postsecondary Research.
- Maxwell, M. (1997). *Improving student learning skills*. Clearwater, FL: H & H Publishing.
- McCabe, R. (2000). *No one to waste: A report to public decision makers and community college leaders*. Washington, DC: Community College Press.
- McCabe, R. (2003). *Yes we can: A community college guide for developing America's underprepared*. Washington, DC: Community College Press.
- Morante, E. (1989). Selecting tests and placing students. *Journal of Developmental Education*, 13(2), 2-4, 6.
- Muraskin, L., & Lee, J. (2004). *Raising the graduation rates of low income college students*. Washington, DC: The Pell Institute for the Study of Opportunity in Education.
- National Center for Education Statistics. (2003). *Remedial education at degree-granting postsecondary institutions in Fall 2000*. Washington, DC: U.S. Department of Education.
- Roueche, J., & Roueche, S. (1999). *High stakes, high performance: Making remediation work*. Washington, DC: Community College Press.
- Saxon, D.P., Sullivan, M., Boylan, H., & Forrest, D. (2005). Developmental education facts, figures, and resources. *Research in Developmental Education*, 19(4), 1-4.
- Sedlacek, W. (2004). *Beyond the big test: Noncognitive assessment in higher education*. San Francisco: Jossey-Bass.
- Schwartz, W., & Jenkins, D. (2007). *Promising practices for community college developmental education*. New York: Community College Research Center, Teachers College, Columbia University.
- Upcraft, L., Gardner, J., & Barefoot, B. (2004). *Challenging and supporting the first year student: A handbook for improving the first year of college*. San Francisco: Jossey-Bass. 📖

**Canfield Learning Styles Inventory (LSI)**

Author: Canfield, A.  
 Publisher: Western Psychological Services  
 12031 Wilshire Blvd., Los Angeles, CA 90025-1251  
 Telephone: 800-648-8857  
 www.wpspublish.com  
 Price: \$109.50 for 12 inventory booklets with quantity discounts available.

The LSI can be completed in 15-20 minutes. It allows a student to classify themselves among a learner typology grid which enables administrators to identify groups of students who have similar learning styles. The LSI scores are used to classify students into one of nine learner types and have been standardized on more than 2,500 individuals. This self-report inventory is comprised of 30 items that give information in the following areas: preferred conditions for learning, areas of interest, modes of learning, and expectations for course grade.

**Inventory of Classroom Style and Skills (INCLASS)**

Authors: Miles, C., & Grummon, P.  
 Publisher: H&H Publishing Company, Inc.  
 1231 Kapp Drive, Clearwater, FL 33765-2116  
 Telephone: 800-366-4079  
 www.hhpublishing.com  
 Price: \$3.25 each for 1-99 with quantity discounts available.

INCLASS assesses student attitudes and behaviors related to academic learning. It is a self-assessment instrument designed to assess proficiency in seven areas of academic style and skills which affect student performance in the classroom such as studying, test-taking, homework, and collaborative learning. It is a diagnostic and prescriptive instrument that gives teachers and counselors a framework for developing instruction and other tailored interventions for students. INCLASS is purported to be a statistically valid and reliable assessment.

**Index of Learning Styles Questionnaire (ILS)**

Authors: Soloman, B., & Felder, R.  
 Publisher: Barbara A. Soloman and Richard Felder  
 North Carolina State University, Raleigh, NC 27695-7905  
 www2.ncsu.edu/unity/lockers/users/f/felder/public/ILSpage.html  
 Price: Available at no charge on the Internet.

The ILS was developed for use with college students. The instrument identifies four learning style dimensions: Active-Reflective (prefers to do something active with information, such as discuss, apply, or explain, or prefers to think about it), Sensing-Intuitive (prefers to learn facts and follow established processes or prefers abstractions and learning by discovery), Visual-Verbal (prefers to learn through pictures, diagrams, demonstrations, etc. or prefers to learn through written and spoken words), and Sequential-Global (prefers to learn in linear steps or prefers to absorb material almost randomly and put things together in novel ways).

**Learning and Study Strategies Inventory (LASSI)**

Authors: Weinstein, C. E., Schulte, A. C., & Palmer, D. R.  
 Publisher: H & H Publishing  
 1231 Kapp Drive, Clearwater, FL 33765  
 Telephone: 800-366-4079  
 www.hhpublishing.com/\_assessments/LASSI/  
 Price: \$3.50 per unit. Quantity discounts are available.

The LASSI is a 10-point scale, 80-item study skills assessment designed to diagnose relative student strengths and weaknesses. It provides standardized scores and national norms for scales falling under the descriptions of skill, will, and self-regulation of strategic learning. It may be used to identify student educational intervention areas, counseling needs, or as a pre-post achievement measure following student participation in a particular intervention. It is available in paper and pencil or in a web administered format.

**Noncognitive Questionnaire (NCQ)**

Authors: Sedlacek, W., & Tracey, T.  
 Publisher: Jossey-Bass  
 989 Market Street, San Francisco, CA 94103-171  
 Telephone: 415-433-1740  
 www.josseybass.com  
 Price: Published in *Beyond the Big Test: Noncognitive Assessment in Higher Education*, \$45.00.

SUBSCRIBE



TODAY!

The NCQ measures eight noncognitive variables found to be related to college success, particularly for minority students. The instrument consists of 18 Likert-scaled items and 3 open-ended questions. The measured variables are positive self-concept, realistic self-appraisal, successful handling of the system (formerly identified as “understands and deals with racism”), preference for long-term over short-term goals, availability of a strong support person, successful leadership experience, demonstrated community involvement, and knowledge acquired in a field. Research results showed reliability and construct validity for the NCQ. For whites, the dimensions of self-concept, preference for long-term over short-term goals, and realistic self-appraisal were the most strongly related to GPA. The NCQ was shown to significantly enhance the prediction of grades for whites. For blacks, the variables related to GPA were self-concept and realistic self-appraisal and the instrument was shown to enhance the predictability of both grades and enrollment status. The results from the NCQ may be useful as admissions entry standards; for anticipating successful GPA, persistence and graduation results; and for advising and counseling intervention.

#### **Perceptions, Expectations, Emotions, and Knowledge about College (PEEK)**

Authors: Weinstein, C., Palmer, D., & Hanson, G.

Publisher: H&H Publishing Company  
1231 Kapp Drive, Clearwater, FL 33765-2116

Telephone: 800-366-4079  
www.hhpublishing.com/

Price: \$1.75 per test with quantity discounts available.

The PEEK is a 30-item Likert-scaled instrument which assesses student's expectations about college. It is designed to measure three dimensions. Personal items measure expectations about emotional reactions to college. These include the extent of preparedness for college-level work, the degree to which college fits their future goals, and the extent to which the student takes personal responsibility for their learning. Social items measure expectations about college social pressures, instructor interaction, the make-up of college populations, and relationships between family, peers, and friends.

Academic items measure the expectations about course difficulty, the nature of learning, instructor roles and responsibilities, and the nature of college instruction. Proposed uses of the PEEK are to increase student awareness of college expectations, to assist with advising and counseling intervention, and to assist with the development of college acclimation courses.

#### **Study Behavior Inventory v.2.0 (SBI)**

Authors: Kerstiens, G., Bliss, L., & Marvin, R.

Publisher: Andragogy Associates  
3434 West 227th Place, Torrance, CA 90505

Telephone: 310-326-5819  
www.sbi4windows.com/

Price: \$32.50 for pencil and paper. Institutional site licenses are available for a computerized version.

The SBI is a 46-item self-report survey designed to assess the study behaviors of college students in three areas. Short-term study behavior is defined as preparation for daily tasks such as completing readings and reviewing class notes. Long-term study behaviors are defined as completing long range academic tasks such as projects, papers, and preparing for final exams. Academic confidence is defined as affective variables that influence self-perception, self-esteem, locus of control, and field dependence or independence. Reports highlight performance in the following areas: Time Management, Study Reading, General Study Habits, Listening and Note Taking, Writing, Test Anxiety, Test Taking, and Faculty Relations. The student is also offered referrals to appropriate campus services. Research on the instrument indicated high levels of internal consistency reliability for the instrument and scores on each of the three factors. It can be administered in 15 minutes via computer or is available in a paper and pencil format.

#### **The VARK Inventory V. 7.0**

Authors: Fleming, N.

Publisher: Neil Fleming  
www.vark-learn.com

Price: There is no charge to use the VARK; visit the Web site for copyright permission.

The VARK identifies four learning style dimensions: Visual (preference for learning is information through nonverbal depictions such as charts, graphs, symbols, and hierarchies), Aural (preference for learning is hearing or auditory), Read/Write (preference for learning is written or displayed as words), and Kinesthetic (preference for learning is through experience and practice such as simulations). Because this instrument addresses sensory perceptions, it has no apparent evidence of reliability or validity. However, it makes intuitive sense and has some face validity.

*Note.* Adapted from Levine, P., Saxon, D.P., & Boylan, H. (2008). Affective assessment for developmental students (Parts 1 and 2). *Research in Developmental Education*, 22(1/2).1-4. Reprinted with permission.



## **MICHIGAN DEVELOPMENTAL EDUCATION CONSORTIUM**

*Introduces...*

### **25<sup>th</sup> Annual Spring Conference**

April 8<sup>th</sup> & 9<sup>th</sup>, 2010

Kellogg Hotel & Conference Center  
at  
Michigan State University

## **CONFERENCE UPDATE**

*The 24<sup>th</sup> MDEC state conference was held on March 27<sup>th</sup> and 28<sup>th</sup>, 2009.*

*MDEC would like to thank all of the presenters for their fine work. The conference had the largest attendance ever with over 200 registrants.*

*We would like to thank the Michigan Department of Energy, Labor, and Economic Growth; Community Colleges Services Unit, ACT, Bedford, Cengage, Freeman and Worth, Houghton-Mifflin, Jobs for the Future, McGraw-Hill, ModuMath, Pearson, PLATO, and Townsend Press for supporting this conference.*

*If you have ideas for a conference theme, keynote speakers, or workshop presenters for next year's conference, please contact a board member prior to our mid-June planning retreat.*

## **MDEC Board Members**

Ann Iseda, President  
IsedaAnnE@jccmi.edu

Deborah Daiek, President Elect  
ddaiek@schoolcraft.edu

Nichole Lloyd, Secretary  
lloydn@lcc.edu

Annette Magyar, Treasurer  
amagyar@swmich.edu

Karel Asbury, Membership  
asburyk@kellogg.edu

Joe LaMontagne, Membership  
Joe.Lamontagne@davenport.edu

Lois McGinley, Newsletter Editor  
mcginleyl@macomb.edu