A Comprehensive Cost/Benefit Model: Developmental Student Success Impact

By Alejandro J. Gallard, Frank Albritton, and Mark W. Morgan

ABSTRACT: ***Colleges are facing an increasing population of students who begin their college experience in developmental education classes in reading, math, and/or English. Many of these students are unsuccessful in attaining a degree, sometimes because they are deterred by their lack of preparation and the delay of two or more semesters before they begin their college-credit courses. One community college in Florida has implemented an intervention in its developmental education program funded through a U.S. Federal Title III-A grant, achieving increases in course completion rates and student retention with an enhanced tutoring program. The authors present the cost/benefit of the tutoring intervention, demonstrating a surprisingly large return on the investment both to the college and society.***

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Efforts to increase success of students who need developmental education can be costly. However, expenditures for achieving advancements for developmental education students are recouped in financial benefits to institutions and ultimately to society at large. Using costs and actual student results from 5-years of developmental education student advancement data, the authors developed a model to calculate a return on the investment from a specific developmental education initiative with remarkable results.

Developmental Education

Demographic variables are associated with retention and graduation rates of community college students. Characteristics of gender, race, and socioeconomic status are known to be factors associated with college success and degree attainment (Bailey & Averianova, 1999; Bailey & Morest, 2004; Zeidenberg, 2008). However, another factor cuts across demographic characteristics for determining success as students enter college: how well prepared students are to take college-level courses upon entry (Greene, 2000; McCabe & Day, 1998; Reason, 2003). McClenney (2004) has reported that half of all first-time community college students are in need of developmental education in English, math, or reading. There is ample evidence to support that academic interventions can be effective in helping students overcome deficiencies in their precollege academic preparation (Pascarella & Terenzini, 2005). Developmental education interventions promote underprepared students' achievement and persistence in both the short term–the students' first semester–and in the longer term, leading to degree completion (Boylan & Bonham, 1992; Braley & Ogden, 1997; Campbell & Blakey, 1996; Weissman, Silke, & Bulakowski, 1997). Interventions are critical for beginning community college students who need developmental education. McClenney (2004) explained, "The plain truth of the matter is that if students don't succeed in developmental education, they simply won't have the opportunity to succeed anywhere else" (p. 15).

Developmental education is "a comprehensive process that focuses on the intellectual, social, and educational growth and development of all students. Developmental education includes, but is not limited to, tutoring, personal and career counseling, academic advising, and coursework" (National Association for Developmental Education, 2010, para. 5). This article focuses on a developmental education program including classes to increase mathematics, reading, and writing skills as well as one-on-one tutoring in these content areas. The program's end goal is to increase retention and graduation rates for developmental education students entering college.

Economic Issues

Critics of developmental education frequently point to the cost of developmental education as a hindrance to implementation. Approximately one billion dollars is spent nationally on developmental education programs each year (Barnett, 2007). In the state of Florida, approximately one-half of the cost for developmental education programs (faculty salaries, facilities, support services, materials, etc.) is funded by the state at an annual total exceeding $100 million (Office of Program Policy and Government Accountability, 2006).

Although costs are associated with delivering developmental education programs, there are also financial incentives and benefits for developmental programs that lead to success-

ful student outcomes. "The greatest misconception about developmental education is that it is costly" (McCabe & Day, 1998, p. 30). In reality, students who succeed in developmental education provide financial benefits to institutions and, upon graduation, become an integral part of society, generating a positive return to society and decreasing social expenditures (Bailey, Jenkins, Jacobs, & Leinbach, 2003; Schuyler, 1997; Wyman, 1997).

The use of cost and benefit analysis has long been a common tool for evaluation in business, government, and national defense but less often in the field of educational policy. In terms of this paper, a cost (e.g., increased tutoring faculty costs) and benefit analysis for student retention is defined as the benefits (e.g., increased tuitions and state reimbursements) accruing to an institution of higher education as well as to society of increased retention and graduations rates as compared to the cost (e.g., faculty training and student services/program implementation) of the intervention.

Applying a cost/benefit model to education, Belfield and Levin (2007) investigated the cost to the state of California taxpayers of the impact of several changes, including higher teacher salaries, to the structure of public education in California and on high school student retention. The benefits to the California taxpayer and society as a whole was calculated using the impact on increased tax revenues from graduates, lower crime rates, lower unemployment rates, and so forth, to determine the overall benefit as compared to the cost of implementing changes. In addition to the increased budgetary impact of the higher salaries, the cost of keeping the retained students in school longer as well as the cost of the subsidies the students would receive if they continued in public financed higher education after high school were also factored into the analysis. The research indicated that a 10% increase in teacher pay (cost) would increase high school graduation rates by 5% (benefit). That translated into a $3,190 cost for every additional graduating student. On the benefit side, the higher tax revenues from graduates and the decreased costs of social program expenditures were calculated. The actual cost to benefit ratio turned out to be 1 to 2.55: For every dollar invested in teacher higher salaries, there was a 2.55 factor return from greater tax revenues and decreased social program expenditures.

The same model of analysis can be used in the evaluation of retention in higher education programs. Specifically, there are two measureable benefits to increasing retention: the institutional benefit of retaining students and the societal benefit of having educated and productive workers. The institutional benefit accrues to the institution in that students who stay in school pay tuition; there may also be incentives from the state and the federal government for higher completion rates. Levitz, Noel, and Richter (1999) calculated that a 2-year institution could save almost half of a million dollars if it was even modestly successful at increasing retention from the first to the second year by 10% (e.g., from a drop-out rate of 30% to 27%). Given their calculation that the average drop-out rate from the first to second year for open-door institutions was an astounding 46%, a 10% reduction could lead to a significant savings via the number of students retained.

The societal benefit of retention is less publicized, perhaps less understood, and also more difficult to quantify, although Schuyler (1997) has noted the benefits of increasing retention and graduation rates: "The education and training provided by community colleges lead to better employment opportunities for individuals, further educational opportunities, and enriched personal and professional lives" (p. 1). Increased retention and graduation rates for developmental education students reflect positive academic and economic indicators for a given community and society as a whole (Bailey, Jenkins, Jacobs, & Leinbach, 2003; Breneman, 2001; Goldrick-Rab, 2010; Leslie & Brinkman, 1988; Wyman, 1997).

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Researchers have conducted studies to quantify the economic impact on students and society for degree completers and for noncompleters acquiring portions of a college education, both at 2-year and 4-year institutions. A comprehensive study by Kane and Rouse (1995) was based on research by the National Center for Educational Statistics which tracked thousands of students, beginning in the 8th grade, over several decades. Kane and Rouse found that economic returns (e.g., higher lifetime earnings) to students completing associate degrees were 10% to 25% greater than to students who had only attained high school diplomas. Among nondegree completers, there was a 5% to 8% economic increase per year of community college completed. Subsequent studies, such as Marcotte, Bailey, Borkoski, and Kienzl (2005), confirmed sizeable economic gains associated with individuals achieving some college education and determined that rates of unemployment were lower in areas in which residents had higher numbers of college credits earned (and in particular with females having completed additional years of college).

A study conducted in an area which geographically approximated the location of the community college referenced in this study attempted to quantify the total benefits to students and society of attending Hillsborough Community College in Tampa, Florida (Robison & Christophersen, 2003a). The researchers determined that higher earnings associated with an additional year of education amounted to over $4,200 annually per student whereas the associated social benefits (e.g., lower crime rates, fewer social services, better health, additional tax revenues) equated to a total benefit of nearly $19,000 per year to the community as a savings on social programs.

Student Advancement Benefits

The authors developed a model entitled Benefits from Student Advancement based on the works of Greene (2000), Katsinas and Opp (2001), and Robison and Christophersen (2002, 2003a, 2003b). Three questions guided the development of the model based on external and incidental benefits (Robison & Christophersen, 2002):

- What are the financial benefits to the institution for student advancement?
- What are the benefits to society for student advancement and degree completion?
- What are the returns on investments from interventions leading to student advancement and degree completion?

The study was undertaken subsequent to the award of a Title III Federal Grant (Strengthening Institutions Program Development) to the host community college for increasing the retention and academic success of developmental education students experiencing their first semester in college. Grant initiatives included teaching developmental education classes in student cohort groups for mathematics, English, reading, and college success; hiring peer mentors who were former successful developmental education students; enhancing the college's Academic Success Center's tutoring and support services for students; and establishing a Faculty Teaching/Learning Institute to train and support faculty with effective instructional strategies. The specific name of the program was Avenue to Success.

The grant enhanced the college's Academic Success Center by funding tutors with experience and advanced degrees in English, mathematics, and reading. Additionally, a computerized mentoring and tutoring system was estab-

lished to monitor participation and success rates of developmental education students identified as Avenue to Success participants. This system allowed for the following:

- coordination between counselors and the Academic Success Center, tutors, and faculty;
- up-to-the moment and longitudinal reports on academic progress of all Avenue to Success students; and
- a demographic breakdown of participants to include gender, race, and ethnicity.

The Student Advancement Model

Costs and Benefits

Earlier in this paper we defined cost and benefit analysis for education as a comparison of cost to implement an intervention (e.g., increased tutoring faculty costs) and benefits (e.g., increased tuitions, fees, and state reimbursements) accruing to an institution of higher education as well as to society of increased retention and graduations rates. There are two types of costs–termed investments–associated with the Benefits for Student Advancement Model. Historically money was provided for delivery of course instruction. However, with the injection of Title III money tutoring was added to developmental education efforts. The first investment (investment only for retained students) was money allocated and used by the institution to deliver course instruction. If an entering student was not retained then an ongoing investment (cost) would not have been made. Based on actual, recurring institutional expenditures for students served by the Title III Grant (again only for students retained) during the year of intervention studied (2006-2007), this approximated $168 per student credit hour or about $504 per student per 3-credit hour course. Ongoing expenditures were calculated by assessing the per-unit costs of instructional (classroom) and student support services (advising, financial aid processing, and institutional overhead). The second investment was Title III grant funds used for activities outlined earlier: teaching developmental education courses in cohort groups, hiring well-qualified tutors, and training faculty in order to enhance the Academic Success Center.

Three financial benefits were examined: (a) performance allocations awarded to the college by the state as a result of developmental education students completing specific program milestones (e.g., completing developmental education requirements, completing 30-credit hours, earning credentials), (b) an increase in annual state funding as the result of increased full-time equivalents (FTEs), and (c) an increase in normal student fees associated with registration and course enrollments.

Model Rationale

The rationale for the study is to conduct a cost benefit analysis on the impact of enhanced support to developmental students made possible by a monetary intervention from a Title III grant for developmental education at a community college. The full economic benefit of student retention is measured as the economic benefits (i.e., continuing tuition and fees plus state incentives for specific advancements) associated with students advancing academically toward associate degree completion. Specific milestones of student advancement were identified from the first term of student enrollment: (a) completion of first developmental course, (b) completion of developmental education requirements, (c) progression to college credit courses and completion of 12-credit hours, (d) completion of 30-credit hours (typically half of associate degree requirements), and (e) associate degree completion. Advancement rates from one milestone to the next, based on 5 years of historical student data at the college, were calculated and used as the baseline of performance.

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The authors wanted to see if investments from the institution and from grant-supported interventions would improve student advancement and if advancements would generate a positive return on investment. As noted previously, grant investments were used to enhance the pay and qualifications of tutors in the Academic Success Center (equivalent to the pay and qualifications of adjunct instructors for college credit courses); support acquisitions of hardware, software, and college systems to improve tracking of Avenue to Success students; and deliver faculty workshops on instructional strategies and student performance.

Results

Ongoing Institutional Benefits

Improved methods of gathering data on student achievement made it possible to differentiate between students receiving tutoring and those not receiving tutoring who were in the same developmental education classes. As Table 1 illustrates, students receiving tutoring from the Academic Success Center one or more times had both higher pass rates (C or better) in their developmental education courses and higher re-enrollment rates (percent fall term students who enrolled spring term) than developmental education students in the same courses who did not receive tutoring from the Academic Success Center.

Student Advancement Model Benefits

Given the data in Table 1, a student receiving tutoring from the Academic Success Center is associated with higher course pass rates and re-enrollment rates than students not receiving tutoring. A chi-square test for independent samples–$X^2 = 3.84$, $p < 0.5$ (15.5), $X^2 = 20.13$, $p < 0.001$ (25.7)—shows significance. The first difference is significant at the .05 level for passing with A-C. The predisposition to re-enroll, as measured by pass rates, is statistically significant at the .001 level.

Disaggregated data revealed even greater course completion increases for certain groups: the increase in completion rates for Hispanic students in developmental education courses was 26.5%; for African-American students it was 31.6%. However, the 15.5% overall increase in developmental education course completion rates

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Table 1

Developmental Education Student Gains from Academic Success Center (ASC) Tutoring

Students	Number of Students	Development Ed Course Pass Rates (% A,B,C)	Fall to Spring Re-enrollement Rates(%)
Dev. Ed. Students Receiving ASC tutoring	155	78.1	55.0
Dev. Ed. Students not Receiving ASC tutoring	738	62.6	30.3
Difference		15.5*	25.7**

Note: *$p \leq 0.5$; **$p \leq .001$

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was used to calculate the economic benefits of student advancement resulting from state allocations to the institution (see Table 2).

Table 2 extrapolates historical averages of advancement rates from one milestone to the next to predict that 182 students should complete an associate degree based on a cohort of 1,350 first time in college students entering a fall term 4 years earlier. Economic benefits (income) were calculated for each milestone based on the sum of student tuition and fees, funding received from the state for enrolled students, plus incentives the state provided for achieving student milestones minus institutional costs (i.e., instructional and student services expenses). State-provided performance funding allocations are rewards to institutions for students achieving predefined milestones.

As expected, students advancing to degree completions generate additional economic benefit to the institution through the accumulation of student fees, funding allocations, and performance incentives. The authors note the milestone benefit does not equate to a profit; as a public institution, the college does not generate a profit. However, additional funding through performance incentives and lowered institutional costs are applied to operational costs for instruction, student services, facilities, and other needs.

Next, the authors examined the cost for implementing the Title III enhancements, which equated to approximately $29 per student served during the period of investment. The $29.00 was the investment per student for hiring more experienced tutors. This figure was determined by taking the total number of students (n=1,000.00) who received enhanced tutoring sevices divided into the total cost ($29,000) per semester of tutoring, including hiring more experienced and higher degreed (i.e., masters vs. bachelor's in content areas) tutors. Nearly 1,000 developmental education students benefited from the investment, but the authors focused on the 155 students who both received tutoring from the Academic Success Center during the investment period and passed (at a rate of 78.1%) their developmental education courses. Students who received Academic Success Center tutoring reflected a 15.5% pass-rate advantage over developmental education students who did not request tutoring from the Academic Success Center during the same period.

Applying the increase of 15.5% to the 155 students receiving tutoring, the authors calculated that 24 more students completed their developmental education courses than would have completed their courses (given the historical first-term course completion rate of 60%.) Next, we applied the historical advance rates to the additional 24 first-term completers to estimate that 5 additional students would progress and graduate as a result of the first-term tutoring intervention. Follow-up analyses confirmed the estimate; seven students receiving tutoring from the Title III enhancement actually completed associate degrees within 4 years of their starting term.

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Table 2

Benefits from Student Advancement Model

Cost Benefit Factors	Student Advancement Milestones				
	Complete First Developmental Education Course (4 credit hrs)	Complete Developmental Education Requirements (8 credit hrs)	Progress to Degree Program: Complete 1 term (20 credit hrs)	Half-way to Degree (30 credit hrs)	Graduate from Community College (60 credit hrs)
Historical Advance Rate (5 yr averages)	60%	75%	80%	50%	75%
Historical Number of Students at Milestone	810	608	486	243	102
Milestone Benefit[1]	$44	$115	$220	$336	$806
Tutoring Investment	$29/student				
Number of Students Tutored	155				
% Gain in Course Completions	15.5%				
Number of Additional Students at Milestone	24	18	14	7	5
Revised Milestone Benefit	$15	$115	$220	$336	$806
Total Benefit from Additional Students	$360	$2,072	$3,171	$2,422	$4,357

Note[1]: (Institutional Fees and Funding minus Institutional Costs) + State Incentives

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The authors calculated a revised milestone benefit (dollar figure) by applying the historical milestone benefit to the extrapolated data for the number of students receiving Academic Success Center services who would reach the first milestone: Subtracting the $29 per student tutoring investment from the increased revenues yielded a first-term milestone benefit of $15 per student. We calculated the "Total Benefit from Additional Students" by multiplying the number of additional students at each milestone times the revised milestone benefit.

Summing the total benefit from additional students row (Table 2) yielded $12,382 or $79 per student for the 155 students receiving tutoring from the initial $29 investment. This equates to a 272% return on investment ($79/$29).

Societal Benefits

The investment in tutoring during a student's developmental education courses pays off in increased revenues for the institution and for society (see Table 3). Robison and Christophersen (2003a; 2003b) examined Hillsborough Community College–an institution within the same state as the site of this study–and the economic impact of an additional graduate on the community due to better health, higher productivity, higher earnings, reduced crime, and other societal factors. As shown in Table 3, the researchers estimated an annual benefit to society of $18,913 per associate degree graduate.

We applied Robinson and Christopherson's (2003a) findings to those of the current study. Given the increase of 5 graduates with the tutoring intervention and the historical advancement rates, the investment of $29 per student for 155 students tutored ($4,495) translated into a total return to society on the investment of 2104% ($94,565/$4,495).

Discussion and Implications

With half of the students entering community colleges not ready for college-level classes (McClenney, 2004), the future competitiveness of the U.S. workforce is at risk. Consider that a developing country such as India produced almost 50 million college graduates in 2004 (Jain, 2005). This compares to only 2.5 million U.S. college graduates for the same year (U.S. Census Bureau, 2004). To improve the competitiveness of the U.S. workforce, the number of college graduates must increase. One way to accomplish this is to help students advance through their degree sequence and increase the number of students at each milestone toward degree completion. However, this is more complex than meets the eye, especially when focusing on certain groups of students such as Hispanics.

Study results show that the intervention of using an enhanced tutoring center can dramatically increase the completion rates for students, especially among Hispanic students. The estimated Hispanic population is a little over 48 million people in the United States and this is the fastest growing minority group, with states such as Florida having populations of at least one-half million Hispanics (U.S. Census Bureau, 2004). Therefore, the present and future implications for education are enormous for this population, especially as seen in the context of educational attainment by race.

The future competitiveness of the U.S. workforce is at risk.

For Hispanics who enter college, 51% of them take at least 6 years to graduate (Huenke, 2010). It is the 6 years that should be noted as "among students who are less well prepared–those in the second to fourth quintile of high school academic intensity (the majority of both Hispanic and white students)–nearly 66% of Latinos initially enroll in open-door institutions. Less than 45% of similarly prepared white college students initially enroll at open-door institutions (Fry, 2004, p. vi). The phrases "less well prepared" and "open-door institutions" have direct implications for community colleges and other institutions that offer and bear the cost of developmental programs. This is even more significant given the rapid increase of the Hispanic population and its potential impact in the future on these same institutions as well as goals for a more highly educated populace in the U.S.

The cost/benefit model presented in this study can also be customized to apply to other developmental programs, institutions, and states. Resulting data can be used both to secure continuing funding as well as for formative program evaluation.

Limitations. The small sample population at a single institution limits the transferability of findings from the study. In addition, the design and analyses show a correlation only between investments and student success leading to cost benefits; an analysis of effect size—to demonstrate cause and effect—requires a large sample.

Conclusion

Seminole State College in Sanford, Florida used a 5-year Title III-A Improving Institutions Grant to improve the rates of retention and transition for developmental education students in math, reading, and English into college-credit classes. An integral part of the program was an enhanced Academic Success Center which invested in the quality of its tutoring services by employing degreed and experienced tutors. The program investments resulted in increases in developmental education course completion rates of 15.5%, with a return on investment to the college of 272%, far surpassing its original investment. Using past research on the positive external impact of student success, additional educational level attainment, and college graduation to society, the return to society of the original college investment soared to more than 2000%.

The lessons learned from this cost/benefit model of an intervention in college developmental education is that early successful intervention pays off for students, the institution, and society. The model can be useful to other programs and institutions across the states to expand the research base in developmental education.

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Table 3

Social Return on Investment from Advancing Developmental Education Students

AA Graduate Benefits	Benefits per Yr per Graduates	Number of Add'l Graduates (with Tutoring)	Societal Benefit (with Tutoring)	Tutoring Investment	Return on Investment
Better Health	$621				
Reduced Crime & Social Costs	$1,271				
Greater Productivity	$360				
Additional Earnings	$16,661				
TOTAL	$18,913	5	$94,565	$4,495	2104%

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References

Bailey, T., & Averianova, I. (1999). *CCRC Brief No. 1.* New York, NY: Community College Research Center, Teachers College, Columbia University.

Bailey, T., Jenkins, D., Jacobs, J., & Leinbach, T. (2003, April). *Community colleges and the equity agenda: What the record shows.* Paper presented at the AACC National Conference, Dallas, TX.

Bailey, T., & Morest, V. (2004). *The organizational efficiency of multiple missions for community colleges*. New York, NY: Community College Research Center, Teachers College, Columbia University.

Belfield, C.R., & Levin, H. M. (2007). *The return on investment for improving California's high school graduation rates.* California Dropout Research Program. Retrived from http://schoolfinance.org/resource_center/research/CADropout-Research2.pdf

Barnett, E. (2007). *Validation experiences and persistence among urban community college students*. Retrieved from http://gradworks.umi.com/32/50/3250210.html

Boylan, H., & Bonham, B. (1992). The impact of developmental education programs. *Review of Research in Developmental Education, 9*(2), 1-3.

Braley R., & Ogden, W. (1997). When failing indicates higher graduation potential. *College Student Journal, 31*, 243-250.

Breneman, D.W. (2001). *The ouputs of higher education*. Paper presented at the Futures Forum 2001, Forum for the Future of Higher Education, Cambridge, MA.

Campbell, J., & Blakey, L. (1996, May). *Assessing the impact of early remediation in the persistence and performance of underprepared college students*. Paper presented at the meeting of the Association for Institutional Research, Albuquerque, NM.

Educational Attainment by Race and Hispanic Origin, 1940 to 2013. (2007). Infoplease. Pearson Education, publishing as Infoplease. Retrieved from http://www.infoplease.com/ipa/A0774057.html-axzzoxjVpUvhJ

Fry, R. (2004). *Latino youth finishing college: The role of selective pathways*. Pew Hispanic Center. Retrieved from http://pewhispanic.org/ reports/report.php?ReportID=30

Goldrick-Rab, S. (2010). Challenges and opportunities for improving community college student success. *Review of Educational Research, 80*(3), 437-469.

Greene. J. (2000). *The cost of remedial education: How much Michigan pays when students fail to learn basic skills. Estimate of the annual economic costs to businesses, colleges and universities to counteract employees' and students' lack of basic reading, writing and arithmetic skills* (A Mackinac Center Report). Midland, MI: Mackinac Center for Public Policy.

Huneke, S. (2010). *Low Hispanic college graduation rates threaten U.S. attainment goals*. Seattle, WA: Bill & Melinda Gates Foundation. Retrieved from http://www.gatesfoundation.org/press-releases/Pages/american-enterprise-institute-study-shows-low-hispanic-college-graduation-rates-100318.aspx

Jain, S. (2005, December 19). Graduates in India? 48.7 million. *Rediff News*. Retrieved from http://in.rediff.com/money/2005/dec/19guest1.htm

Kane, T., & Rouse, C. (1995). Labor-market returns to two- and four-year colleges. *American Economic Review, 85*, 600–614.

Katsinas, S., & Opp, R. (2001). *Title III: A critically important federal initiative supporting rural community colleges*. Retrieved from http://www.eric.ed.gov/ERICWebPortal/search/detailmini.jsp?_nfpb=true&_&ERICExtSearch_SearchValue_0=ED470505&ERICExtSearch_SearchType_0=no&accno=ED470505

Leslie, L., & Brinkman, P. (1988). *The economic value of higher education.* New York, NY: American Council on Education.

Levitz, R., Noel, L., & Richter, B. (1999, Winter). Strategic moves for retention success. *New Directions for Higher Education, 27*(4). Retrieved from http://www.jcu.edu/academic/planassess/planning/files/Planning%20articles/strategic%20retention%20success.pdf

Marcotte, D., Bailey, T., Borkoski, C., & Kienzl, G. (2005). The returns of a community college education: Evidence from the National Education Longitudinal Survey. *Educational Evaluation and Policy Analysis, 27*(2), 157–175.

McCabe, R., & Day, P. (Eds.). (1998). *Developmental education: A twenty-first century social and economic imperative*. Mission Viejo, CA: League for Innovation in the Community College.

McClenney, K. (2004). Keeping America's promise: Challenges for community colleges. In *Keeping America's promise: A report on the future of the community college* (pp. 5-47). Denver, CO: Education Commission of the States.

National Association for Developmental Education. (2010). *2010 Fact Sheet*. Retrieved from http://www.nade.net/March%202010/Fact%20Sheet/2010%20 Fact%20Sheet.pdf

Office of Program Policy and Government Accountability. (2006). *Steps can be taken to reduce remediation rates* (Report 06-40). Tallahassee, FL: Florida Legislature.

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

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college degree. Current leaders in the field are asking whether statistics could be considered the new standard for students not entering a STEM field. That decision could have significant effect on developmental mathematics curriculum without altering President Obama's goal for increased STEM numbers.

Emphasis has been given to acceleration programs. The opportunity to accelerate should be available to students, and some students will be able to do so; however it CANNOT be forced acceleration. Underprepared students will not always be able to "learn it faster!" The national trend, though, is to push students through the college curriculum as fast as possible. Some colleges are administering a placement test, giving students a workshop on similar test items, and then testing them again so they may place out of developmental education. Research is needed to see how such students fare without developmental education support. This type of research would require longitudinal data to measure success in subsequent credit courses.

Many other new initiatives are being discussed including the search for a quick fix for students who place into developmental education. These include better and multiple assessment tools with the possibility that students may not need a semester-long intervention. More precise assessment certainly has the potential to increase retention as well as student success, and that is a common goal worthy of continued pursuit.

References

Bettinger, E., & Long, B. (2005). Remediation at the community college: Student participation and outcomes. In C. Kozeracki (Ed.), *Responding to the challenges of developmental education, No. 129* (pp. 17-38). San Francisco, CA: Jossey-Bass.

Mellow, G. O. (2008, February). *Each and all: Creating a sustainable American higher education system.* LaGuardia Community College Atwell Lecture at the American Council on Education 90th Annual Conference, San Diego. CA.

National Center for Education Statistics. (2007). *TIMMS report.* Retrieved from http://nces.ed.gov/timss/table07_1.asp

National Center for Education Statistics. (2009). *Distance education at degree-granting post-secondary institutions: 2006-2007. A first look.* Retrieved from http://nces.ed.gov/pubs2009/2009044.pdf

Winograd, D. (2000). *The effects of trained moderation in online asynchronous distance learning.* Retrieved from ERIC database. (ED 455799).

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Reason, R. (2003). Student variables that predict retention: Recent research and new developments. *NASPA Journal, 40*(4), 172–191.

Robison, H., & Christophersen, K. (2002). *The socioeconomics generated by Mt. Hood Community College. Volume 1: Main Report*. Retrieved from http://www.eric.ed.gov/ERICWebPortal/search/detailmini.jsp?_nfpb=true&_&ERICExtSearch_SearchValue_0=ED468764&ERICExtSearch_SearchType_0=no&accno=ED468764

Robison, H., & Christophersen, K. (2003a). *The socioeconomics generated by Hillsborough Community College. Volume 2.* Retrieved from http://eric.ed.gov/ERICWebPortal/search/detailmini.jsp?_nfpb=true&_&ERICExtSearch_SearchValue_0=ED482195&ERICExtSearch_SearchType_0=no&accno=ED482195

Robison, H., & Christophersen, K. (2003b). *The socioeconomics generated by New Jersey's 19 community colleges.* Trenton: New Jersey State Department of Higher Education.

Schuyler, G. (1997). The assessment of community college economic impact on the local community or state. *Community College Review, 25*(2), 65–80.

U.S. Census Bureau. (2004). *Facts for features*. Retrieved from http://www.census.gov/Press-Release/www/releases/archives/facts_for_ features_special_editions/002263.html

Weissman, J., Silke, E., & Bulakowski, C. (1997). Assessing developmental education policies. *Research in Higher Education, 28*, 461-485.

Wyman, F. (1997). A predictive model of retention rate at regional two-year colleges. *Community College Review, 25*(1), 29–58.

Zeidenberg, M. (2008). Community colleges under stress. *Issues in Science and Technology, 24*(4), 53–58.

CONTINUED FROM PAGE 8

Scrivener, S., Bloom, D., LeBlanc, A., Paxson, C., Rouse, C. E., & Sommo, C. (2008). *A good start: Two-year effects of a freshman learning community at Kingsborough Community College*. New York, NY: MDRC.

Strong American Schools. (2008). *Diploma to nowhere*. Washington, DC: Author. Retrieved from http://www.scribd.com/doc/8534051/Diploma-To-Nowhere-Strong-American-Schools-2008

Visher, M. G., Wathington, H., Richburg-Hayes, L., Schneider, E., Cerna, O., Sansone, C., & Ware, M. (2008). *The learning communities demonstration: Rationale, sites, and research design*. New York, NY: MDRC.