The Delivery of Educational Services at FIU: Increasing High-Touch Educational Experiences

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Question addressed by Group: What are the major drivers of change, now and in the foreseeable future, in the delivery of educational services, and how will they likely impact FIU and our predominantly underrepresented and non-traditional (working) students who have been shown to have a greater need for high-touch educational experiences? *Becoming more student-centered, improving teaching, expanding evidence-based learning, LA program, flipped classrooms, etc.*

Executive Summary

The recent iREAL survey identified "becoming more student-centered" as the single most important goal of the next strategic plan, and improving the in-class educational experience will be a central aspect of this improvement. Also, as online education and delivery continue to grow, students will be able to access course content for a lower and lower cost: content will become a commodity. FIU will distinguish itself as an educational institution through its in-class learning experience, which will use the best current practices in pedagogy to increase student learning, skills, and in-class engagement. This learning will be interactive and collaborative and will help develop students' knowledge, analytical, and communication skills. FIU will make these gains in student learning by developing the best practices' teaching skills of its faculty.

Introduction. The primary driver for change in the delivery of educational services at FIU is the need to improve student learning, retention, and graduation rates. We have recently improved our 6-year undergraduate FTIC graduation rate to 50%, but we still significantly lag our peer institutions: 60.3% (UCF), and 58.0% (USF). Also, because we lose 17% of freshmen after their first year, we lose 17% of our investment in each first-year undergraduate class.

SUS Comparative Graduation Rates
FTIC (6 year) and Transfer (4 year)
2011-2012

School	FTIC	AA Transfers
UF	85%	82%
UM	81%	-
FSU	75%	80%
UCF	65%	67%
ASU	58%	-
USF	56%	66%
FIU	47%	62%

The need to improve the educational experience, particularly the in-class experience, is driven by factors internal and external to the university:

- FIU "becoming more student-centered" was the highest-ranked iREAL survey response for students, faculty, and staff, and a key interpretation of being "student-centered" is to improve the student educational experience;
- Increasing access to online education, which is driven by decreasing technology costs, competition, and a focus on decreasing costs to students and institutions, will drive down the cost of online education, which will become commoditized over time. This, in turn, will necessitate an in-class experience that is significantly better than an online education if the in-class experience is to justify its additional cost. Because of FIU's significant investment in brick-and-mortar facilities, it will need to provide a strong motivation for students to continue to come to its campuses, and an excellent in-class experience can be that motivation.

- State use of performance-based measures such as graduation rates for university funding is increasing in Florida, and maximum funding will require increases in our graduation rates;
- State and federal accountability requirements are largely focused on the production of degrees (i.e., the "Completion Agenda"). However, this has the potential unanticipated consequence of lowering educational standards. One response to this concern has been to turn from a singular focus on the production of degrees to a parallel focus on the quality of learning (Ewell). Improving the in-class educational experience and making it one in which students further develop higher-order thinking and communication skills will demonstrate that the education they receive at FIU is of high quality. A focus on quality would also be a stronger motivator for faculty to improve their curricular designs than a call for increased degree production.

Because of increasing access to and use of online learning, FIU's physical campus and in-person educational experience will remain relevant and a good value to the extent that it can maximize the in-class experience. Students derive both perceived and actual value from face-to-face interactions with university faculty and instructors at all levels. The face-to-face learning environment provides the opportunity to get support and feedback from instructors and provides faculty with the opportunity to gauge students' understanding. Optimizing the value in the on-campus learning environment should maximize these features by making the classroom experience more engaging and meaningful, with students actively working with faculty and instructional staff to develop the skills specific to the discipline as well as those that will transfer across disciplines. "To make the campus experience worth the extra money it will always cost to deliver, we need a stronger focus on the nature of our product and more integration and alignment of values and mission" (Bowen). The important skills we offer—from critical thinking, application in all fields, moral reasoning, and even soft skills—cannot be acquired passively. Students need to practice them, and get copious feedback on their performance, in order to improve.

Improving success in gateway courses is critical to increasing student success, retention, and graduation rates, and decreasing the cost of attrition. Gateway courses will continue to need improvement in teaching and learning because these are significant predictors of dropout. Historically, approximately 17% of students drop out before their second year, many because of performance in gateway courses. Students in the most preparatory-level courses are at highest risk for dropout. For example, 46% of freshmen starting in 2012 who failed Writing & Rhetoric I dropped out within the year, compared to a 33% dropout rate for those who failed Writing & Rhetoric II. Similarly, 38% of Fall 2012 freshmen who failed Intermediate Algebra dropped out, compared to 23% who failed Finite Math and 14% who failed Pre-Calculus. Failing grades in these early classes, particularly those taken by less-prepared students, are predictors of dropout. Early dropouts reduce the number of students who can proceed through to a degree and make it more difficult to increase the university's retention and graduation rates.

FIU's first-year retention rate of approximately 83% indicates that 17% of students are not returning, and so the university loses 17% of its investment in first-year students. Increasing performance in gateway courses will stem some of this significant first-year loss. To the degree that the gateway courses also help students learn what they need to learn to be successful in college, they will help increase the percentage of students who progress to a degree.

The design of a course, including goals, assessments, and daily activities, is of fundamental importance and requires careful crafting. Awareness of the need for planned, critically reviewed, instructional design was a key finding of this workgroup. A great classroom experience will help students build accurate models through sense-making and collaboration. It will challenge them but offer support, so they feel confident to stretch and take intellectual risks. These types of experiences require planning, and benefit from the help of professionals experienced in curricular design.

Great teaching will look different from field to field, and classroom to classroom, but in all cases great teaching will need to achieve learning for *transfer*. In order to attain this, effective classrooms will keep students highly engaged with the material, with each other, and with the faculty member; but more importantly, they will keep students practicing and improving. Great teaching will demand repeated application of concepts in a variety of situations, from a variety of perspectives, to ensure that students master (and can use) concepts rather than merely memorizing content. Great teaching will also help students learn to self-assess their learning, so they can reach for mastery and continue to learn beyond the confines of the classroom.

To support faculty development in pedagogy, FIU should provide comprehensive course development support for new and continuing faculty. New faculty should be provided with at least 2 weeks paid support before their first semester to work on their syllabi, assessments, learning goals, and activities with specialists in pedagogical development at the university (e.g., the Center for the Advancement of Teaching (CAT)). Continuing faculty should also be offered support to improve their courses through work with the CAT. One incentive for faculty may be that in working with the CAT, they may be able to design in advance all of their assignments and exercises for their course, and so be able to spend more time doing research during the semester than would be possible if they were preparing their course materials as they went.

Faculty can also benefit from discipline-specific pedagogical development opportunities. Professional associations typically have committees, publications, and meetings focused on pedagogy, and these can provide development support for faculty. For example, the American Physical Society supports physics and astronomy faculty with a wide range of guides and programs for course transformation. Faculty should be supported in their efforts to pursue discipline-specific pedagogical development through travel grants and funds for continuing education.

The primary obstacle to improvements in teaching voiced by faculty is that teaching is not rewarded in tenure decisions and is not valued by their departments. This issue needs to be given serious consideration as it is a very real factor. This reality will require a nuanced approach and will differ for tenured, tenure-track, and instructional faculty. In addition to annual review system changes, department and unit leaders can work on cultural changes in their departments.

I. Improving the Success of Students in Gateway Courses

Gateway courses are taken by thousands of incoming freshmen each year and are predictors of student dropout, particularly for students in the most preparatory-level courses. Five courses in 2012 were failed by more than 400 freshmen each (not counting other students who failed), and are linked to students not returning for Fall 2013: Finite Math (743 failed, 47% failure rate, 23% of those who failed did not re-enroll in Fall 2013); College Algebra (612 failed, 45% failure rate, 26% of fails did not re-enroll); Writing and Rhetoric I (503 failed, 16% failure rate, 46% of fails did not re-enroll); Intermediate Algebra (421 failed, 45% failure rate, 38% of fails did not re-enroll); Writing and Rhetoric II (407 failed, 13% failure rate, 33% of fails did not re-enroll) (data from the Office of Retention and Graduation Success).

Just as failure is a high predictor of dropout for gateway courses, passing courses is a high predictor of retention: for the five courses noted above, the average retention rate for students who passed the course was 22 percentage points higher than for those who failed the course. For example, the retention rate for students who failed Finite Math was 77%, while the retention rate for those who passed Finite Math was 90%. The greatest gap in retention for students passing vs. failing a course was for Writing and Rhetoric I: retention was 87% for students who passed the course, but only 54% for those who failed it.Dropouts related to failure of gateway courses is a significant expense for the university: FIU loses the funds it invested in the 17% of freshmen who typically do not return for their sophomore year.

The high failure rates in gateway courses is a significant inefficiency because as students retake the courses, departments must plan on filling seats for both new students and those re-enrolling in them. Course failures make it challenging to project the numbers of seats needed in subsequent courses, and increase inefficiency in the creation of sections, potentially creating over- and under-subscribed classes.

In the last year, College Algebra has undergone significant changes in pedagogy, content and instructional design. Historically, it was the most-failed course on campus, and had a 33% average passing rate. Following a multi-year process of innovation, its passing rate has doubled to 63% (Fall 2013), demonstrating that significant improvements are possible in the passing rates in historically high failure rate gateway courses.

II. Providing Professional Development for Faculty, Instructors, and Adjuncts

Pedagogical development of tenure-track faculty and instructors

Enriching the in-class learning experience depends in part upon the professional, pedagogical development of the faculty member or instructor.

- Provide new faculty and instructors with 2 weeks paid salary during the summer before they start at FIU when they receive structured support on course design, curriculum planning, assessment planning, creation of class exercises and exams, setting up their course in the current course-management software, and identifying online materials and resources for their class. For tenure-track faculty, this time can be promoted as an opportunity to fully develop their courses, so that they have more time during the semester for their research.
- Provide 1-2 weeks of funding each summer for current faculty to work on making their courses more interactive, for making significant curricular improvements, and for designing new materials for their courses. This approach will support faculty as they prepare to implement best-practices approaches to teaching their material.
- Support faculty travel to meetings held by their professional societies that are specifically on pedagogy in their discipline. Support other discipline-specific pedagogy development opportunities such as webinars and books.
- Collect and disseminate FIU-specific data on the performance of students in different versions of a class.
- Calculate the return on investment of increases in retention rates for gateway courses that can be attributed to improvements in pedagogy.

Excellent instructors rather than adjuncts for gateway courses. The first two years, which are largely taught by instructors and adjuncts, are a particularly important period for improving student learning and academic success. Some departments, such as Mathematics and Statistics, have increased their number of instructors (i.e., to 20). Instructors are far preferable to adjuncts as they offer greater stability to both the teacher and the student. Instructors can be required to participate in pedagogical development opportunities as part of their work requirements, can learn about the institution and help students navigate it, and have office space and can meet with students. Offering instructorships to the best adjuncts is a way to create a cadre of excellent, experienced teachers. In some cases, FIU-trained adjuncts in fields such as math education have left to other local institutions because they could not get full-time positions at the university. Increasing the use of instructors would allow us to get back some of our best graduates.

Improving the success of students with adjuncts. Adjuncts and their students face a series of challenges that the university can ameliorate. First, adjuncts may not have time to devote to professional development because they are teaching at several different local universities. This

problem can be improved by better projecting the numbers of seats needed in a course, so that it is possible to offer the best adjuncts enough course sections so that they will work full-time at FIU for a term or year, rather than splitting their time amongst institutions. Second, adjuncts generally do not have office space at the university and do not have a regular place to meet with their students, so they do not hold office hours. Adjuncts should be offered shared office space so that they can meet their students outside of class hours.

Assessing faculty teaching. A focus on pedagogy will lead to an emphasis on assessing, rather than evaluating, faculty teaching. Assessment is done with an eye to ongoing improvement, while evaluation is summative in nature (e.g., "good/bad"). Assessment focuses on the long-term goal of pedagogical development rather than on the immediate goal of evaluation for performance. "Evaluations" are frequently seen as synonymous with faculty evaluations by students, and are often discounted as popularity contests. However, in-class evaluations of faculty by their department peers can suffer from a lack of knowledge by the evaluators on what constitutes effective pedagogy.

Instead, simple in-class evaluations by peers should be replaced by assessments that are carried out by both FIU experts in pedagogy and discipline-specific experts. Knowledge of subject matter and pedagogy are both important in teaching. We should think of how to develop our human resources for assessments based on pedagogical content knowledge. There are a number of issues that a pedagogy specialist can target but there is also content-specific knowledge required for a full assessment of teaching ability (e.g., is the professor clearly explaining the need for the concept of function, what is the kernel of understanding necessary for students to have a truly functional and accurate understanding of F=ma, etc.). Assessments can also review syllabi and course designs.

Second, faculty should be given increased incentives to participate in pedagogical development opportunities. These incentives could be proportionate to expectations about the faculty member's teaching responsibilities relative to their research responsibilities: the more significant one's teaching responsibilities, the more one would be expected to take advantage of pedagogical development opportunities.

Design and retrofit classrooms to facilitate interactive learning. Currently, 4 classrooms are being built to feature interactive tables. These rooms are more conducive to interactive learning than are theatre seating-type classrooms. If the interactive classrooms are used effectively, construct additional classrooms with tables.

III. The Importance of Teaching in Faculty Evaluations

According to the faculty members on our committee, the single greatest factor in improving teaching is to weight teaching more heavily in faculty members' annual evaluations.

Annual faculty evaluations. As an institution that considers research one of the two primary purposes of a university, along with teaching, FIU places emphasis on scholarly research and productivity. Our legitimate aspirations to be a great research university, however, cannot ignore our demographics and the fact that we have many under-prepared students who need excellent teaching to be successful: 70% of our undergraduates are from Miami Dade County, and 60% of undergraduates earning degrees in 2012 were Pell-grant eligible/low-income. As President Rosenberg has said, "Just as geography is destiny, demographics are destiny."

This reality will require a nuanced pedagogical development approach and will differ for tenured, tenure-track, and instructional faculty. One potential approach follows: Instructional faculty should be allotted time and resources to develop excellent pedagogical skills. Such skills should be an expectation of their positions. Tenured faculty with low to moderate research productivity may have a greater percentage of their annual assessment shifted to pedagogical development and teaching assessment. Tenured faculty with higher research productivity may have fewer pedagogical development expectations. Tenure-track faculty should be hired with the expectation that they will become good teachers, and that they will need development to get there. These faculty may be required or strongly urged to attend course development workshops before their first term and before subsequent terms in which they teach different courses. Following the direction of the National Academy of Sciences, the university should also consider discipline-based education research as part of discipline-specific research.

Cultural changes in departments. Cultural changes in departments are challenging but must be addressed. Does a department's culture create the expectation that a large percentage of students in a class will fail? How can this expectation be changed to the expectation that students will learn a great deal in a class and will pass? It may be helpful to compare passing rates for a class within a department, and/or to compare rates to peer institutions where the same course is taught. For example, a 2009 ENLACE Florida report showed that FIU had the lowest passing rate in College Algebra in the SUS and was a document referred to in the Provost's Math Task force that implemented the recent changes in the teaching of College Algebra.

References

"Opening the gates to success in Florida higher education." ENLACE Florida Policy Research Brief, October 2009 (Vol. III, Issue 5).

Bloss, Adrienne, Paul Hanstedt, and Susan Kirby. Creating a Culture of Integrative Professional Development—96 (4): 12

Bowen, Jose Antonio. (2012). "Teaching Naked: How Moving Technology Out of Your College Classroom Will Improve Student Learning." San Francisco: Jossey-Bass.

Ewell, Peter T. (2012). "The 'Quality Agenda': An Overview of Current Efforts to Examine Quality in Higher Education." A Discussion Paper Prepared for the American Council on Education (ACE).

Fethke, Gary C. & Andrew J. Policano. (2012) Public No More: A New Path to Excellence for America's Public Universities. Stanford, CA: Stanford Business Books.

Humphreys, Debra. (2012). "What's Wrong with the Completion Agenda—And What We Can Do About It." Liberal Education, Vol. 98, No. 1. Page 8

Rosenberg, Mark B. (2013). "President's Corner." FIU Magazine, Spring 2013 (26).

Schneider, Mark. and Kelly, Andrew P. "Getting to Graduation: The Completion Agenda in Higher Education." Baltimore: The Johns Hopkins University Press, 2012. Project MUSE. 12 Dec. 2013.

Singer, Susan R., Nielsen, Natalie R., & Schweingruber, Heidi A. (Eds.) (2012). Discipline-Based Education Research: Understanding and Improving Learning in Undergraduate Science and Engineering. The National Academies Press: Washington, D.C.

The College Completion Agenda. Retrieved Dec. 4, 2012, from http://completionagenda.collegeboard.org/