iREAL Working Group

Question: How will new modalities of education impact the six-year graduation rate of our first-time-in-college students, the primary performance funding indicator used by the Board of Governors?

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Executive Summary

The iREAL group, tasked with asking how new modalities of education will impact six-year graduations rates of our FTIC students, identified the following modalities for discussion: online, including MOOCs; hybrid classes, including flipped classrooms; prior learning assessment; adaptive courseware; cohorts; dual enrollment; mass-customizable curricula; seamless undergraduate to master's degree programs; the "15 to finish initiative," as well as internships and work study. Each group member had experience with one or more of these modalities and referenced best practices as well as internal and external data. Looking at each modality revealed potential opportunities to expand access to higher education--often at a reduced cost to the student—and to increase the rate of graduation and reduce time to graduation. Some of the modalities seem to be solutions in themselves but may be difficult to implement and/or costly. Others may require re-evaluation before further expansion. Hybrid classes emerged as a modality that FIU should consider expanding across curricula. Competency-based education is re-emerging as a way to give credit for life experience as well as for courses taken at other institutions and/or online, thereby decreasing time to graduation. Across all modalities the high-touch/high-tech approach seems to be the most effective. And finally a high level of engagement with a mentor, as well as involvement with peers and in campus activities, increases successful graduation rates.

Problem

Higher Education is currently facing unprecedented challenges. New modalities of education are also emerging such as online, hybrid, MOOC courses, dual enrollment courses, and accelerated education. Many of these new modalities are possible as a result of advanced technologies that make it possible to deliver education in ways that are innovative and non-traditional. Simultaneously, the college student population is changing. The "non-traditional student" is becoming the norm. This would include more students who are working, supporting families, single parents, living off-campus, returning veterans, and more students for whom English is not their first language. Furthermore, entering college students are requiring more remedial courses especially in math and English.

Meanwhile, tuition is rising and state and federal support–including financial aid–is dwindling. As a result graduation and retention rates are decreasing, while time to graduation is increasing. These factors among others contribute to a growing sense of isolation, lack of motivation, and an inability to justify the increasing cost of education, leading to a decreasing sense of return on investment.

By finding creative solutions to these complicated and multifaceted problems, while utilizing best practices and research data, FIU could help students stay in college longer and graduate in a timely manner.

1. Online

- Due to flexibility and lack of reliance on campus physical space, online course sections often provide opportunities for students to take classes they need in order to graduate expeditiously. There are several ways in which online courses could be better utilized by FIU to increase the graduation rate.
    - **Adaptive Learning** - a form of online learning that involves developing highly interactive learning modules that adapts to the student providing a custom tailored educational experience rather than a generic information dissemination approach.
    - **Gamification theory** involves adding features to a course or a learning module that employs many of the same features that make games so engaging. (Adaptive Learning often represents a form of Gamification.)
    - **Master Course model** (currently being piloted at FIU). Having a Master Course template ready to be picked up and taught in short notice by faculty would aide in course availability and creates efficiencies, faculty member does not have to develop course. Does not allow for much flexibility or individual faculty input. **Continue to develop, but with caution and with faculty input and ability to customize.**
    - **Student Support:** Online courses typically require discipline and drive on the part of the students in order to successfully complete them. In the fully online realm, industry trends indicate that having university employees assigned to regularly communicate with and monitor online students significantly aides in retention. FIU Online currently is employing these "Success Coaches" at roughly a 250:1 ratio in the fully online 2.0 programs, but this is only for fully online programs.
    - **Increasing availability of online sections:** Increasing the variety of courses available as well as the number of online sections or class cap sizes should increase the 6 year graduation rate.
    - **Data and Success Coaches:** By providing continuous performance tracking and student evaluation data to university staff ("Success Coaches") who can identify at-risk students and provide significant support early, at-risk students could be identified early and retained. FIU Online currently uses Salesforce.com's CRM to track all prospective online student information and communications and it is a very high-touch data driven operation.

2. MOOCs

- Massive Open Online Courses provide an opportunity to educate large populations inexpensively, however the dropout rate is currently about 90% and leave little opportunity for faculty involvement or interaction with students.
- MOOCs could increase the 6 year graduation rate by allowing students to explore different majors without committing to a full semester or paying for an exploratory course. This accelerated exposure to a major of interest could prevent the selection of incorrect majors and additional credits.

- Also “freemium” MOOC models, where basic course content is free and students pay for complements such as certification. For FIU, it might mean accepting only what the state pays for tuition, and then the students would pay for the add-ons.
- **Explore use of MOOCs, develop assessments, consider using as hybrid or flipped classroom, proceed with caution.**

3. Hybrid

- Also known as blended learning, most models blend both in-class and computer-assisted content. In many models, students spend their classroom time engaging in activities such as in-class discussion, active group learning, and live lecture. They then typically utilize computer-based technology such as online course modules, discussion boards, or other computer-assisted tools for the remainder of the contact hours. **High success rate for Math Mastery Lab. Recommend continuing and more support. Consider expanding hybrid offerings across the curriculum and providing training for faculty.**
- The benefits include the ability to offer students both a high-touch and a high-tech environment in which to learn. This model typically allows students to spend more reviewing those content areas with which they are having difficulty, thus creating better retention of the information. In courses which adopt ½ in-class learning with ½ asynchronous online learning, students are given more flexibility to either schedule other required courses, or to accommodate work/family obligations.
- Would give faculty an opportunity to explore active learning/flipped classroom models of pedagogy, while allowing them the flexibility to spend less time communing and more time working individually with students who need assistance.
- Actions needed: creating the faculty support structures to assist in the development and delivery of the courses. A compensation structure would need to be developed to remunerate faculty for the time they would spend redeveloping the courses (either funding, release time, or other compensation arrangement). Logistical structures would need to be built to optimize the additional room utilization that hybrid courses offer. If additional space were needed for the courses, such as with the Math Mastery Lab, space would need to be identified and renovated.
- The return on investment (ROI) for the University would include the following:
    - higher passing rates for students which leads to fewer students needing to retake courses, fewer sections needing to be offered, fewer adjuncts needed, higher graduation and retention rates, more performance funding from the State for higher graduation and retention rates
    - better utilization of classroom space which leads to fewer dollars needed to build classroom space, more rooms (and lab space) available for additional sections of bottleneck courses, fewer homeless courses each semester.]

4. Flipped Classroom

- The flipped classroom is a pedagogical model in which the typical lecture and homework elements of a course are reversed. Short video lectures are viewed by students at home before the class session, while in-class time is devoted to exercises, projects, or discussions. The notion of a flipped classroom draws on such concepts as active learning, student engagement, hybrid course design, and course podcasting. The flipped classroom constitutes a role change for instructors, who give up their front-of-the-class position in favor of a more collaborative and cooperative contribution to the teaching

process. What the flip does particularly well is to bring about a distinctive shift in priorities— from merely covering material to working toward mastery of it.

- Opportunities: Repurposing of class time into a workshop where students can inquire about lecture content, test their skills in applying knowledge, and interact with one another in hands-on activities. What the flip does particularly well is to bring about a distinctive shift in priorities— from merely covering material to working toward mastery of it.
- Challenges: requires an investment (personal and institutional) of time, resources and infrastructure to support and enable the change. The university would need to create a production infrastructure to create a huge amount of video content.
- **Consider pilot program for flipped classrooms and collect data on success rates.**

5. Adaptive Learning Software

- Adaptive Learning Software is becoming a popular media for teaching students skills using technology that continuously adapts to their level of expertise by monitoring variables such as types of questions that are incorrect, mouse movements, and time-to-click. Essentially, the software gathers metadata about the students as they interact with the software to focus on teaching competencies where students are weakest.
- Advantages of Adaptive Learning Software are that students are able to access information of their mastery of skills and competencies on demand. Knowing this information allows students to focus on areas of weakness. Furthermore, the ADS tailors learning to the individual student in a way that is more difficult in the classroom by exposing them to information they need to practice until they reach mastery.
- Disadvantages center on the lack of empirical evidence that ALS is effective in teaching students competencies. Also, many ALS packages come from commercial companies that lack transparency in multiple aspects, including the methods of determining mastery and the exact content of the lessons taught in the software.

6. Prior Learning Assessment

- PLA encompasses a several different approaches to give students college credit without attending courses. There are four main ways to conduct PLA: student portfolios; Exams (such as the CLEP, DANTES, APP, and Challenge), College Credit Recommendation Service (CREDIT); and individualized reviews depending on factors such as essays, tests, or other assessments. Often, a combination of the above measures is accepted by colleges that embrace PLA.
  - Research is limited on student success with PLA. However, some preliminary studies indicate that PLA's increase success indicators such as time-to-degree, persistence, and graduations rates.
    - The Council for Adult & Experiential Learning (CAEL) http://www.cael.org/pdfs/PLA_Executive-Summary
    - – The study included 48 institutions. Compared to non-PLA students, PLA students:
      - Graduated 2.5 to 10.1 months earlier
      - More likely to have 80% or more of their degree credits if they had not graduate (56% vs. 22%)
      - Higher 7 year graduation rates (43% vs. 15%)
- Portfolios

    - Portfolios are used to summarize competency mastery data that is based on student experiences, including prior work experience, essay samples, project samples, and other evidence.
    - West Virginia University awards credit for portfolios for certain introductory courses. For each course, the requirements for taking credit are outlined as they relate the content of the course. For examples, for Engineering of Mines (EM 205), students can include in their portfolios information about the formal training they have received in mining or the activities and the number of hours spent on them and discussion on the knowledge/skills gained throughout their training/experiences. http://rba.wvu.edu/current_students/portfolios/department_guidelines_for_awarding_portfolio_credit
    - Barry University has a portfolio program aimed at adult and continuing education students that allows them to earn up to 30 credits for demonstrating college competencies in a select group of academic disciplines and topics. Students can add more credits from transfer (max 64 credits for community college or 90 credits for 4 year college), tests (max 30 credits), and ACE (max 90 credits). http://www.barry.edu/ace/current-students/portfolio.html
- CLEP/DANTES allow for students to earn college credit for taking a 90 minute examination based on any of the 5 areas of study offered by CollegeBoard (i.e., history/social science, composition/literature, science/mathematics, business, and world languages). Students who pass an exam can earn from 3-12 college credits that are mainly used to substitute general education courses. DANTES is a program offered to students in the military that offers them extra test prep and free CLEP exams.
- Competency Based Learning – all of the above strategies are part of a larger concept call CBL which not only includes giving students credit for prior learning experiences, but also maps the entire curriculum into competencies that students need to meet in order to graduate.
    - CBL is an approach that measures student learning in terms of competencies or a set of skills to fulfill the requirements of a course or program. CBL was first popularized in the early 1970's and has reemerged in recent years because of the Tuning project in Europe. The Tuning project began in Europe as a pilot study in 2000 to address the objectives of the Bologna Process and later the Lisbon Strategy. Degree programs at universities in Europe are now using the Tuning project method to develop curriculum and learning objectives. In the United States, George D. Kuh and several other experts from the National Institute for Learning Outcomes Assessment (NILOA) (with support from the LUMINA foundation) have begun a similar project called the Degree Qualifications Profile (DQP).
    - Pros of CBL: student centered, provides an opportunity for students with expertise in a field to pass a proficiency, transferability may also be a plus for many students moving from one university to another. Given the impetus for assessment and accountability, it is easier to identify skills or outcomes in the form of competencies. A CBL approach can also prove cost effective. CBL takes the pressure off professors for doing curriculum development, instruction, grading and/assessment, which means that costs of instruction can be lower (Brinkman, 2001). Lastly, the skills or competencies can aptly mirror those needed for the workforce, which can ultimately lead to macro-economic benefits.
    - Cons of CBL: Implementing a CBL approach can prove challenging since there are no standardized program degree competencies in the US. A second con is that the competencies can mirror too much what is being asked in the workforce, which can potentially take away from educating "well-rounded" students, which remains one of the claims higher education upholds.

Resources, tools and strategies for implementation**: Recommend developing set of competencies, especially since FIU degree programs are using outcome-based assessment approaches to measuring student learning already.** Community leaders and businesses can also form part of the committees, which would assist in understanding the skills students need to enter the workforce.

7. Cohort

- A program in which a group of students work together through a lock-step academic curriculum. The body of literature has also indicated that students learn better when connected to each other and to the subject *(1-5).*
- The primary benefit of this model begins with small-group classroom instruction that offers more interaction with instructors, more focus on the subject of interest from early on, and a high touch environment that facilitates proactive interventions when students experience academic or developmental setbacks.
- This will result in higher retention and graduation rates as the QBIC program already shows in its 7 years of life at FIU. For the 2007 and 2008 cohorts, the graduation rate for students enrolled in the QBIC program was 72% (n= 18) and 71% (n=20), respectively, while the graduation rate for their cohort counterparts were 50% (n=1,744) and 44% (n=1,465), respectively. The 2007 QBIC cohort has managed to retain 76% (n=19) of entering students over six years, while the 2008 QBIC cohort has retained 86% (n=24) over five years. For a sample QBIC curriculum *see* http://qbic.fiu.edu*)*.
- Disadvantages: college students seem to oppose the concept of a cohort upon entering a well-structured lock-step program throughout their university career. The full implementation of this model may take several years and will require a continuous dynamic revision of all its components until an effective and efficient working model is achieved. Expensive.
- Actions: A Significant involvement of advisors will also be critical to the development of the model, especially during students' freshman and sophomore years, more classroom space
- **Support and expand the new block program implemented Fall of 2013, providing high touch mentors and advisors. Find resources to expand QBIC type programs.**

8. Dual Enrollment

- (DE) programs allow for high school students to complete college level courses at a minimal price before entering college. Several modalities of dual enrollment programs are offered, including: (1) courses offered at the high schools and taught by high school teachers, (2) courses taught at the high schools and taught by college professors, and (3) courses taught at a college/university and taught by college professors. Each of these models has different advantages and disadvantages.
- Pros: Dual enrollment provides students with a low cost alternative to taking courses at the university.
- Cons: Establishing equivalence is easier for courses taught at the college campus, parents may not have access to their grades because of FERPA policies, students acquiring enough credits may be considered transfers who do not qualify for scholarships aimed at entering freshmen. With the emphasis currently on the first

modality, the program is not sustainable without external funding. At this point, there is not sufficient evidence that students in DE programs will matriculate into FIU. In particular, for STEM disciplines it is difficult to establish equivalence in laboratory equipment between the high schools and the colleges.

- Resources and Tools for Implementation: Funding for FIU oversight, including faculty stipends to visit and interact with teachers and students, support for University college to administer the program (currently with 6,000 students is staffed by 1 person), DE student visits to the FIU campuses, continuing professional development for the high school instructors, and assessment officer at University College to establish equivalence of learning outcomes, syllabi, textbooks, and resources. Resources at the high school site to provide students with remedial preparation as necessary.
- **The committee recommends that the reliance on dual enrollment to resolve issues of retention and graduation be pursued cautiously. Rather than growing dual enrollment further, we should develop a system to better serve the currently enrolled 6,000 students. Relationship between DE and 6 year graduation and retention with the current population of students does not necessarily correlate.**

9. The "Flat" University and Mass-Customizable Curricula

- The elimination of rigid degree plans and a shift towards mass-customization of degree plans is increasingly desired by students and allows highly motivated students to customize their degree plan around their varied interests. In such a model, each student would be responsible for designing an individualized program of study across multiple departments.
- A strong advising and mentoring network would be required to help these students engage fully and take advantage of the range of offerings that a research university has. While such a change represents a dramatic shift away from locked in curricula that typically lead to an ever-narrowing focus and pathway, it is aligned with current workforce trends as well as the ethos of today's students who resist being defined by a singular are of focus or study and who will likely have serial, and potentially unrelated career chapters. In short, the historical classifications and categories such as "majors", "degrees types" that arose from now outdated 18th century enlightenment taxonomies, may no longer the best way to conceptualize and organize the twenty-first century university's teaching mission. Brown is the currently one of the most successful models for such a mass-customized curriculum.
- Opportunities: Allows FIU to be a thought leader in public education and be "Worlds Ahead" by implementing a blue Ocean strategy (Not compete with any other SUS university). Recruit highly motivated applicants by offering them a chance to think critically about, and be co-designers of their educational endeavor. **Consider a redesign of the Honors College as a more independent College with increased enrollment and a fundamentally different curricular model than the rest of the university.**
- Challenges: Antithetical to the increasingly structured and coordinated SUS mandated UCC curricula and the systematization of degrees and curricular.

10. Seamless Undergraduate Masters Degree Programs/2+3 programs:

- FIU's innovative accelerated Master of Architecture degree program may serve as a model for other highly focused, professional degree programs in the university. **Consider developing curricular models that begin with freshman admission and concludes with the conferral of a master's degree applicable to STEM, technology focused, and other professional programs in the university.**
- The key components of the program are: a single curricular path from freshman matriculation leading to the conferral of an advanced masters degree; students begin taking graduate level coursework after successfully completing 73 undergraduate cr. hrs. in their first two years and transition fully to graduate status after successfully completing an additional 60 cr. hrs. of graduate coursework.
- Opportunities: The program creates a pathway for highly motivated students to more rapidly earn the professional degree and join the workforce with an advanced degree. Benefit from value-added components (expanded resources and increased revenue streams) typically associated with graduate education earlier in their educational careers. Seamless programs can simultaneously increase graduate degree counts AND FTIC retention rates since their student cohorts are counted in both of these critical metrics.
  Undergraduate financial aid applies fully before students are converted to graduate status.
- Challenges: Difficulty in transferring to other undergraduate programs and applying the credit hrs. Paying graduate tuition in the third year can be onerous to some students
- 2 + 3/3 + 2 programs: Upper division students are allowed to take graduate-level courses that fulfill both undergraduate and graduate requirements. Provides motivation and time efficiencies.

11. "FIU 15 to Finish" Initiative

- **Develop a strategy to increase the percentage of students taking a 15 cr. hr. course load each semester**. Such an initiative would result in shortening average time to graduation, increasing efficiencies across the university and result in higher FTIC graduation rates.
- Opportunities: There is evidence that increase in time spent on campus correlates w success and higher graduation rates. An additional of 3cr.hrs./semester over 7 semesters should result in a 17% decrease in "time required to graduation" or a 2 semester reduction in the number of semesters required for a 120 cr. hr. Bachelors degree. A similar program is being done in W. Virginia and is being considered in other states. See "complete college America"
- Challenges: The Pell grant currently de-incentivizes on-time graduation with its current funding model of 12 cr. hr. limit. Difficulty in creating a fiscal/admissions model that will ensure that the cost of discounting 8% of total tuition is fully offset through efficiencies gained by moving students through at a faster pace

12. Internships/Mentorships

- Critical non-cognitive variables that impact student success include academic engagement, academic efficacy, educational commitment, campus engagement, resiliency and social comfort.
- **FIU should support more programs and/or modalities that address the issues that are likely to contribute to student success and graduation rates, such as work**

study, internships, opportunities for mentorship, cohorts, high touch, and on-campus housing. To combine mentoring with on-campus housing, consider providing faculty housing in dorms in exchange for serving as a resident "dorm parent." \

- Federal & State Work Study. As a minority-serving institution, Florida International University caters to a demographic that strives to balance several priorities ranging from academic success to financial support. In addition to the academic rigors of a college education, many students at FIU who come from first-generation, low-income backgrounds choose to pursue employment while concurrently enrolling in courses. Engle and Tinto (2008) found that students who were low-income and first-generation were nearly four times more likely to drop out after the first year than their counter parts. We propose that students who demonstrate a desire to work, but exhibit the need for academic support should be encouraged to pursue work-study programs.
  The body of literature suggest there are positive effects of employment on the persistence of first-generation, low-income college students (Mamiseishvili, 2010; Engle & Tinto, 2008; Ishitani, 2006). At FIU, students who earned work-study employment have demonstrated higher graduation rates than their cohort counterparts (see Table 1).

Evaluation of success of all above modalities include increased % of first-year retention rates, graduation rates, and time to graduation, and decrease in number of excess credit hours.

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Table 1. FIU First-time in College (FTIC) Students in Work Study programs by Cohort

Cohort	Cohort (n)	Work Study (n)	Cohort (%)	Graduated WS* (n)	Graduation Rate to Date (WS*)	Six-year Cohort Grad Rate to Date
2006 FTIC	4,271	178	4.2%	109	61.2%	47.3%
2007 FTIC	3,508	151	4.3%	94	62.3%	49.7%
2008 FTIC	3,347	94	2.8%	55	58.5%	43.7%
2009 FTIC	3,130	114	3.6%	34	29.8%	26.9%
2010 FTIC	3,947	185	4.7%	8	4.3%	3.2%
2011 FTIC	4,488	95	2.1%	0	0.0%	0.5%
2012 FTIC	4,340	105	2.4%	0	0.0%	0.0%

*Students who were awarded work-study at any point during their academic career

Table 1 showed the graduation rate of students who were in work-study programs at FIU. The graduation rate is tracked over a span of six years; therefore, it is important to note the rates of the 2006 and 2007 FTIC cohorts since those are the most recently completed graduation rates (47.3% and 49.7%, respectively). Albeit work-study students accounted for approximately 4% of

the cohort population, the graduation rates of the 2006 and 2007 FTIC work-study students were 61% and 62%, respectively.

Furthermore, the graduation rate for work-study students showed a rising trend as earnings increased. This finding suggested that students with higher earnings also had higher retention rates; nonetheless, even students who earned less than $1,500 during their academic career still had a graduation rate above 50%, which was higher than their cohort counterparts.

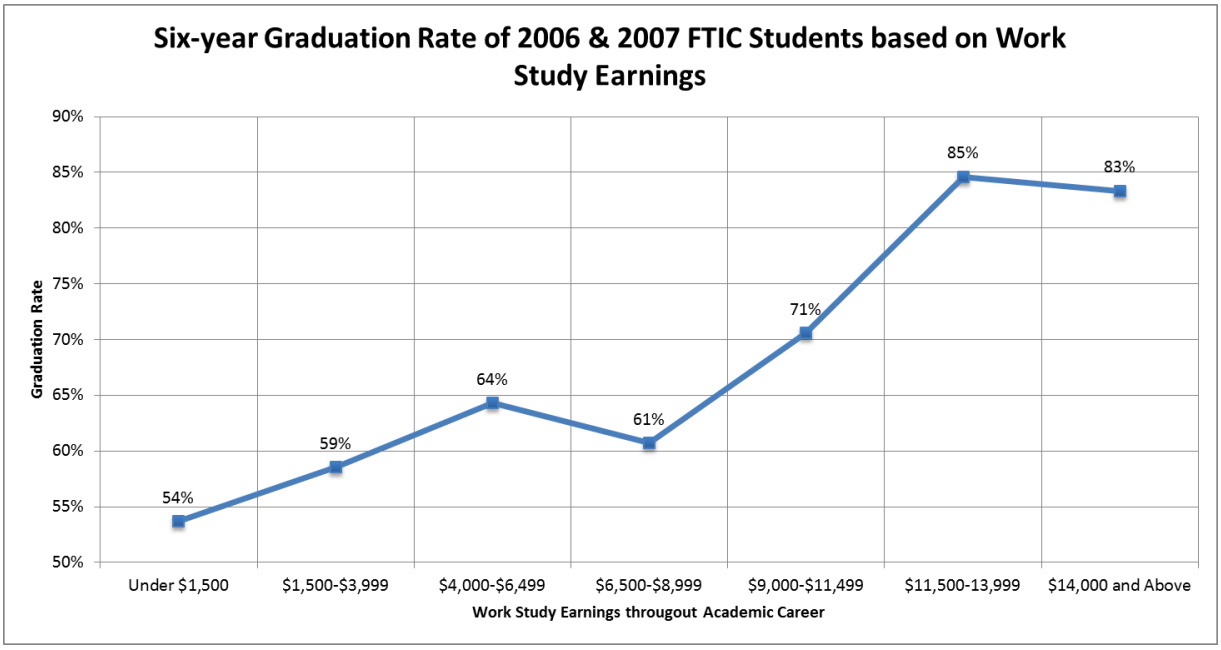

Chart 1. Six-year Graduation Rate of FTIC Work-Study Students who belonged to the 2006 and 2007 FTIC Cohorts

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