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May 1, 2011

Mr. Duncan McBride
National Science Foundation
4201 Wilson Blvd.
Arlington, Virginia 22230

Dear Mr. McBride:

As the External Evaluator, I have completed the FLATE Annual Evaluation Report for the year ending December 31, 2011 . It is enclosed with supplemental appendices. Please contact me with any questions.

Sincerely,

Phil Centonze
Co-Founder and Managing Partner

Enclosures:
Evaluation Report – December 31, 2011 Pages 1 through 44
Appendices (begin on Page 45)

- Appendix A – FLATE 2006-2011 Florida Engineering Technology and Related Program Enrollment and Completion
- Appendix B – 2011 FLATE Stakeholder Survey; Participation & Results Summary

Florida Advanced Technological Education Center (FLATE) Evaluation Report

For Year Ending December 31, 2011

Executive Summary

This report examines and evaluates organizational performance in all key areas as self-identified by FLATE goals and objectives, based on FLATE's environment and award contract, as described in Part I. This evaluation is an integral element of FLATE's Evaluation Plan. Please refer to http://www.fl-ate.org/about_us/evaluation.html, or to the annual evaluation report submitted in 2010 for a full description of that plan. Fundamentally, the evaluation plan serves two primary purposes. First, to collect evaluation data to measure the positive impact on goals of the National Science Foundation (NSF) Advanced Technological Education (ATE) Program including science, technology, engineering and mathematics (STEM) education and workforce impact, as well as the technical skills for STEM technicians and educators. Second, to collect data which satisfy FLATE's industry partners and stakeholders as to FLATE's performance and success. The FLATE evaluation plan and results assures stakeholders that FLATE operates in a manner that is consistent with industry-recognized best business management practices as expressed by the Sterling Criteria for Performance Excellence.

This evaluation report is organized in three parts. Part I is centered on FLATE's operational goals with a section that includes other elements of performance in key areas. Part II includes effectiveness results measures relating, in three sections, to the three overall organizational effectiveness strategies: Curriculum Development and Reform, Outreach and Recruitment, and Professional Development, which speak directly to NSF's expectations for FLATE. Part III includes recommendations for improvement based on this evaluation.

Key strengths, opportunities for improvement, and recommendations are summarized here:

Strengths:

- In each area, Curriculum Development and Reform, Outreach and Recruitment, and Professional Development, evaluation evidence shows that FLATE continues to make

progress in addressing and implementing its strategies. The use of FLATE-developed curriculum at community and state colleges continues to expand. The FLATE outreach activities have increased awareness among stakeholders, although there is further to go, regarding FLATE activities in establishing a climate conducive to promoting manufacturing workforce education, development, training, and career paths. Professional development activities have been targeted to educators and others to support and endorse manufacturing careers among current and potential manufacturing workforce members.

- Communication with, input from, and relationship building with Stakeholders, Staff, Volunteers, Customers, Partners is embedded into the culture and overall operation of FLATE and the Leadership Team. Stakeholder focus is rooted in the organizational culture.

- There's a focus on organizational sustainability. FLATE leadership has a clear vision for the future, and systematically seeks opportunities that align with sustainability options.

Opportunities for Improvement, and Recommendations:

- Increased attention needs to be put to reverse the unfavorable trends in high school enrollments and completions in engineering technology and related programs, since these represent a significant pathway and pipeline to these programs.

- Outreach is a perennial opportunity and requires never-ending attention. Focus should continue on three aspects of outreach: outreach between FLATE and academia to increase awareness of FLATE's services and products; outreach between FLATE and industry to increase awareness of the workforce resources and sources of technical employees for manufacturers; networking connections between industry and academia.

- Efforts should be continued to establish useful and relevant sources of comparison performance data in key areas of importance.

I. FLATE Operational Goals.

FLATE Goals and the related Objectives and Effectiveness Measures are the foundation of FLATE strategies for operational performance success. Figures 1., 2., and 3. match curriculum development and reform, outreach and recruiting, and professional development goals to their corresponding effectiveness measures. Please refer to:

www.fl-ate.org/about_us/docs/FL ATE - 2008-2011 Strategic Hierarchy 110710.pdf

and

www.fl-ate.org/about_us/docs/Effectiveness Measures - 12-15-10.pdf

for descriptions of FLATE's Strategic Hierarchy, current Goals, Objectives, and Effectiveness Measures.

Goal: Effectiveness of Curriculum Development and Reform Efforts.

- To implement a statewide unified education system for manufacturing that positions manufacturing education as a convergent curriculum that optimizes technician preparation in manufacturing and its enabling technologies.
- There are 13 target objectives with 14 corresponding effectiveness measures (Figure 1.).

Figure 1. Effectiveness of Curriculum Development & Reform Efforts

Measure		Measure	
CE-1	Community Colleges - % of implementations in existing programs	**CE-2**	Community Colleges - % increase in students participating
CE-3	Community Colleges - # of new programs	**CE-4**	FL DOE Curriculum Framework documents
CE-5	High Schools - % adopting Automation and Robotics framework	**CE-6**	High Schools - % increase in students participating
CE-7	PSAVs* - % increase in students participating	**CE-8**	Community Colleges - # of college level completers (through various sources) in ET programs
CE-9	High Schools - # of HS level completers (through various sources) in related programs	**CE-10**	PSAV* - # of completers (through various sources) in related programs
CE-11	ET Forum Growth	**CE-12**	Alignment map of MSSC to ET core curriculum frameworks
CE-13	Student Outcomes Gaps documents	**CE-14**	HS certification indicator data

*PSAV=Post-Secondary Adult Vocational School
**MSSC=Manufacturing Skills Standards Council

Goal: Effectiveness of Outreach and Recruitment Efforts.

- To provide an effective outreach platform for Florida's high schools, community colleges, industry, and legislature to access information related to the requirements for, and impact of manufacturing education.
- There are 10 target objectives with 14 corresponding effectiveness measures (Figure 2.).

Figure 2. Effectiveness of Outreach & Recruitment Efforts			
Measure		**Measure**	
OE-1	Florida Trend Magazine's NEXT issue (manufacturing advertorial) - # of contacts by category	**OE-2**	Florida Trend Magazine's NEXT (manufacturing advertorial) - # of qualified leads forwarded to secondary & post-secondary schools
OE-3	Florida Trend Magazine's NEXT (manufacturing advertorial) – Comparison to overall advertorial performance	**OE-4**	Tour Survey results (re: perceptions of students and Industry)
OE-5	# hits on the *Made in Florida* (MIF) Website, flate.pbwiki (home, Video, scholarships, or careers)	**OE-6**	Number of newsletters distributed
OE-7	# MIF DVDs distributed and video views	**OE-8**	# hits on the FLATE.org website
OE-9	$ value of industry cash contribution to FLATE's outreach effort	**OE-10**	$ value of industry in-kind contribution to FLATE's outreach effort
OE-11	# presentations at conferences, events, and other venues	**OE-12**	# nominees for FLATE awards
OE-13	# students attending FLATE supported summer camps	**OE-14**	# students enrolled in STEM courses

Goal: Effectiveness of Professional Development Efforts.

- To present professional development opportunities for technical faculty to develop, refine, or certify their knowledge base within manufacturing and/or its related enabling technologies and educational pedagogies.
- There are seven target objectives with four corresponding effectiveness measures (Figure 3.)

Figure 3. Effectiveness of Professional Development Efforts			
Measure		**Measure**	
PDE-1	Level 1 usefulness/ applicability measures collected at professional development events/training sessions	**PDE-2**	# participant contact hours in workshops/training
PDE-3	# participant contact hours in ET Forum	**PDE-4**	Faculty self-evaluation of performance changes in the workplace as a result of professional development events/training sessions

II. Operational Performance Results

Section A. Effectiveness of Curriculum Development Efforts:

An NSF expectation of this ATE Regional Center is that it engages multiple community and state colleges (hereafter referred to interchangeably as "colleges" and/or "state colleges") and focuses efforts on academic initiatives in partnership with industry that address the technician workforce needs of employers specific to the region. FLATE has designed, developed and promoted degree and certificate programs for colleges, especially the AS degree in Engineering Technology, and the secondary school Automation Production Technician curriculum framework for high schools. FLATE has built enrollment in these programs.

This report provides a five or six year review, depending on the specific figure, of enrollment and completion data for the Engineering Technology (ET) and related degree and college credit certificate (CCC) programs for Florida colleges, and for related programs at the secondary and Post-Secondary Adult Vocational Schools (PSAV) level. All data are provided upon FLATE's request annually by the Florida Department of Education (FLDOE).

While the data reporting mechanism is reliable and repeatable, the reported data's accuracy is impacted by two factors. First, the data does not include enrollments for undeclared majors. Second, there is some inconsistent reporting by registrars since all data might not be input by cut-off dates among colleges. Collectively these factors have resulted in some data discrepancies

and anomalies particularly in colleges where older program titles have collapsed and new program titles are added.

Figures 4. through 8. address Effectiveness Measures CE-1, CE-2, CE-3, and CE-8, relating to Community and State College adoption and proliferation of the ET Degree Program and related degrees and certificate programs. These data provide a perspective on the historic lack of unified focus within the State College system. FLATE's work with educational partners has sharpened focus on the whole system. The data reflect the long term effectiveness of curriculum development and reform as related to implementation of the FLATE-developed ET Degree program in Community and State colleges in Florida. Twenty-five colleges offer nine AS & AAS degrees related to Engineering Technologies. These include programs in Aerospace Technology, Biomedical Engineering Technology, Chemical Technology, Computer Integrated Manufacturing, Drafting and Design Technology, Electronics Engineering Technology, Industrial Management Technology, Manufacturing Technology, and Simulations and Robotics Technology. Schools transitioning to the FLATE-initiated ET Degree are consolidating and closing out old technological degree programs.

Figure 4. depicts the favorable growth in adoptions of the ET Degree program by colleges. Several other colleges are in discussion with FLATE and have expressed interest in adopting the program. The growth in ET Degree program adoptions reflects not only the perceived value of a consistent and standard state-wide program, but also the outreach effort by FLATE to embed the ET framework into the academic system.

Figure 4. Academic Year – ET Degree Program Adoptions	
Academic Year	**Number of Colleges**
2007-2008	3
2008-2009	5
2009-2010	10
2010-2011	11*
Colleges Implementing ET	
Brevard Community College (Cocoa)	St. Petersburg College (St. Petersburg)
College of Central Florida (Ocala)	Polk State College (Lakeland)
Hillsborough Community College (Tampa)	Florida State College at Jacksonville (Jacksonville)
Florida Gateway College (Lake City)	Pensacola Junior College (Pensacola)
State College of Florida (Sarasota)	Daytona State College (Daytona)

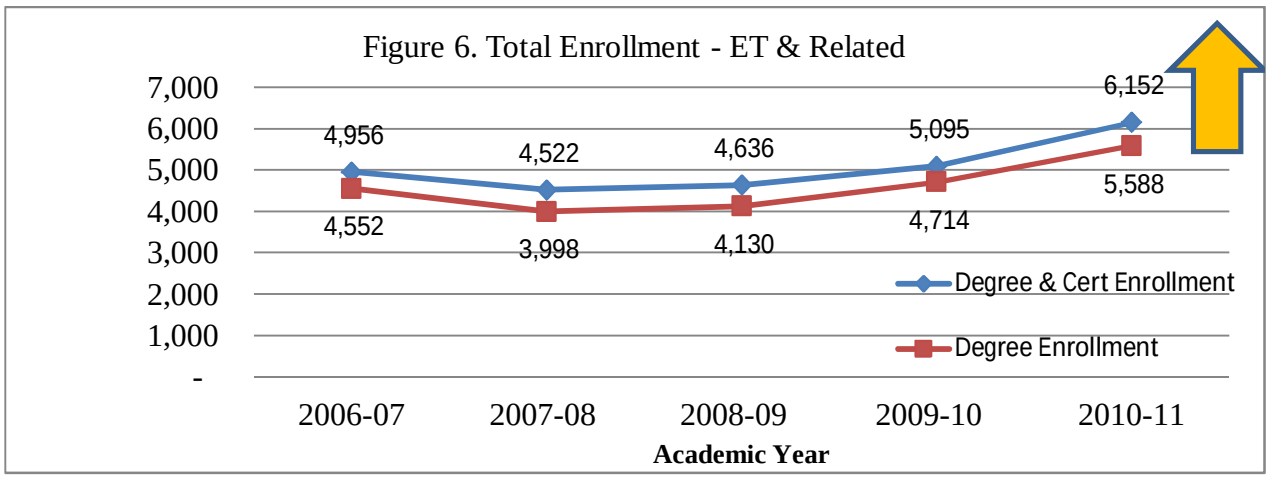
*Note: 11 adopted, 10 implemented

Figure 4. also indicates that the South and Southwest Florida regions are least represented with respect to ET Degree curriculum adoption. However, FLATE has developed working partnerships with the regional manufacturers associations. South Florida manufacturers have been recently recruited to the National Visiting Committee and Industry Advisory Council. These partners are facilitating outreach to make greater inroads to the academic and manufacturing communities in that southern region of the State, the most densely populated by manufacturers.

Figures 5. and 6., reflecting enrollment data since 2005, also suggest overall effectiveness of FLATE's curriculum development and propagation efforts. The data show an overall favorable improvement trend in recent years since deployment of the ET Degree curriculum to adoptive colleges since academic year 2007-2008.

Figure 5. ET Degree Enrollment & Related Technology Enrollment						
Program	**2005-06**	**2006-07**	**2007-08**	**2008-09**	**2009-10**	**2010-11**
Overall ET Degree Enrollment	Non-Existent			145	347	603
Total Degree Enrollment - ET & Related	5147	4552	3998	4130	4714	5588
Percent Change Year over Year		-12%	12%	3%	14%	18.5%
Total Enrollment ET Degree & Related Degree & Certificate Programs	5398	4956	4522	4636	5095	6152
Percent Change Year over Year		-8%	-9%	3%	10%	21%
Comparative Program (Connecticut) Enrollment	625	665	797	978	1201	1275
Comparative Program Enrollment Percent Change Year over Year		6%	20%	23%	23%	6%

Since the FLATE ET Degree program was implemented in three colleges in the 2007-2008 school year, a previously unfavorable decline in enrollments in engineering technology-related programs has been reversed. Direct enrollments in the ET Degree program statewide have increased from non-existent to 603 students in the 2010-2011 school year. Overall enrollments in related degree programs and including related certificate programs have favorably increased 21% year over year in the 2010-11 academic year. Figure 6. visually depicts the favorable trend since 2007 in Total Enrollment—ET Degree & Related Degree & Certificate Programs.



Additionally, Figure 5. reports the cumulative Engineering Science (635) and Technology enrollment data (1275 total) for the College of Technology (COT) as provided by the Regional Center for Next Generation Manufacturing ATE Center. Although the 2010 data show fewer students enrolled in Florida's Engineering Technology A.S. Degree, the current enrolment in Florida colleges (603) is within about 5% of the equivalent A.S. degree student count at COT. More significantly, within the period since the FLATE-developed ET Degree was approved by the Florida Department of Education, (the last four columns in Figure 5.) the Florida A.S. degree enrollment grew by 125 more students than A.S. degree in Connecticut. This growth is compared to 13 community colleges in Connecticut versus the 10 colleges as of 2010 that offer the E.T. degree in Florida. Although the data indicate the ET degree has established its presence in Florida, there is still room for improvement. Additional comparative information and data should be sought to judge overall effectiveness of the FLATE approach. Additional data should be collected showing overall growth of enrollment in the schools where ET and related enrollment is monitored; as well as growth in the Connecticut system. There also may be opportunity for in depth benchmarking the Connecticut degree program and/or others with similar approaches to identify best practices that can be adapted to the Florida A.S. structure. Since identifying and collecting comparative data for organizations like FLATE, is difficult and time consuming this successful comparison is lauded. Lessons learned should be noted to refine and improve future selection and collection of comparative data.

Figures 7. and 8. depict data trends for college completions in these ET and ET related programs around the State since the 2006 academic year. Figure 7. shows since 2007, a significant downward trend in the Industrial Management Technology program with clear positive trends in Drafting and Design Technology, Biomedical Engineering Technology, Chemical Technology, and Engineering Technology. Similar to data reported in earlier charts, favorable trends generally commenced and are coincident with the FLATE ET Degree program implementation in the 2007-08 school year. Similarly there is an overall favorable increase in enrollments, since the 2007-08 school year (Figure 5.).

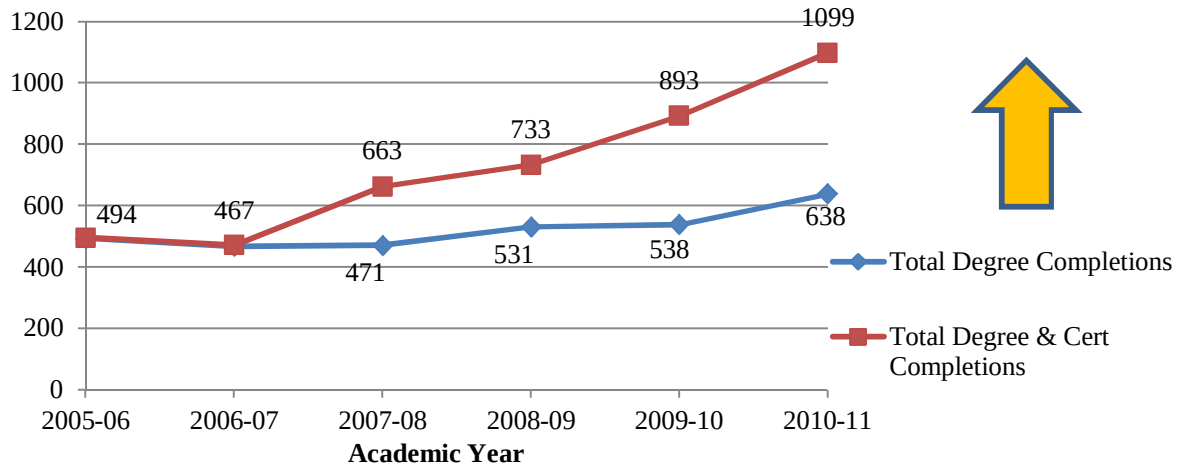
Since then through the 2010-11 academic year, degree completions have grown from 471 to 638, a 35% increase; and completions for both degrees and certificates, are up from 663 to 1099, a

66% increase. Individual related AS degree programs fluctuate during the period but the overall favorable trend is evident.

Figure 7. ET & Related College Degree & Certificate Completions by Program						
Related AS Degree Programs	**2005-06**	**2006-07**	**2007-08**	**2008-09**	**2009-10**	**2010-11**
Aerospace Technology	21	10	6	15	11	18
Biomedical Engineering Technology	17	28	24	23	30	35
Chemical Technology	12	9	17	13	19	34
Computer Integrated Manufacturing	3	28	7	8	6	5
Drafting & Design Technology	119	107	110	121	124	132
Electrical Distribution Technology*						1
Electrical Power Technology *						45
Electronics Engineering Technology	90	86	65	117	93	123
Engineering Technology				7	14	37
Industrial Management Technology	231	192	239	222	237	199
Manufacturing Technology	1	7	1	4	3	5
Simulation Technology			2	1	1	4
Total Degree Completion	494	467	471	531	538	638
Total Degree & Certificate Program Completions	496	472	663	733	893	1099

*added this year to data collection

Figure 8. ET & Related College Degree & Certificate Completions



The following Figures 9., 10., 11., and 12. show data used for monitoring the progress of curriculum effectiveness at the secondary or high school level. These address effectiveness Measures CE-5, CE-6, and CE-9 relating to new programs, enrollments, and completions by secondary and post-secondary programs that support manufacturing industry sectors.

Figure 9. Secondary Enrollment by Technology Program					
Program	**2006-07**	**2007-08**	**2008-09**	**2009-10**	**2010-11**
***Applied Welding**					1,157
****Automation & Production Tech**				37	26
***Electronic System Assembly**					5
Electronics Technology	692	675	626	603	635
Engineering Assisting	315	347	291	351	283
Engineering Technology	6,139	8,134	8,522	6,853	6,438
Industrial Biotechnology			229	285	201
Industrial Machinery Maintenance	35	204	164	22	228
***Machining**					175
***Pathways to Engineering**					7,362
Materials and Processes Technology	5,576	4,661	4,602	3,942	3,030
Production Technology	2,093	1,868	1,717	1,584	1,440
***Precision Metal Fabrication**					1
***Sheet Metal Fabrication Technology**					1
*****Solar Energy Technology**					78
Technology Systems	2,731	2,222	1,902	915	670
Total Enrollment by Program	17,581	18,111	18,053	14,592	21,730
Percent Change Year over Year		3%	0%	-19%	49%
Total Enrollment by Program (without data new to this report in 2011)	17,581	18,111	18,053	14,592	13,029
Percent Change Year over Year		3%	0%	-19%	11%

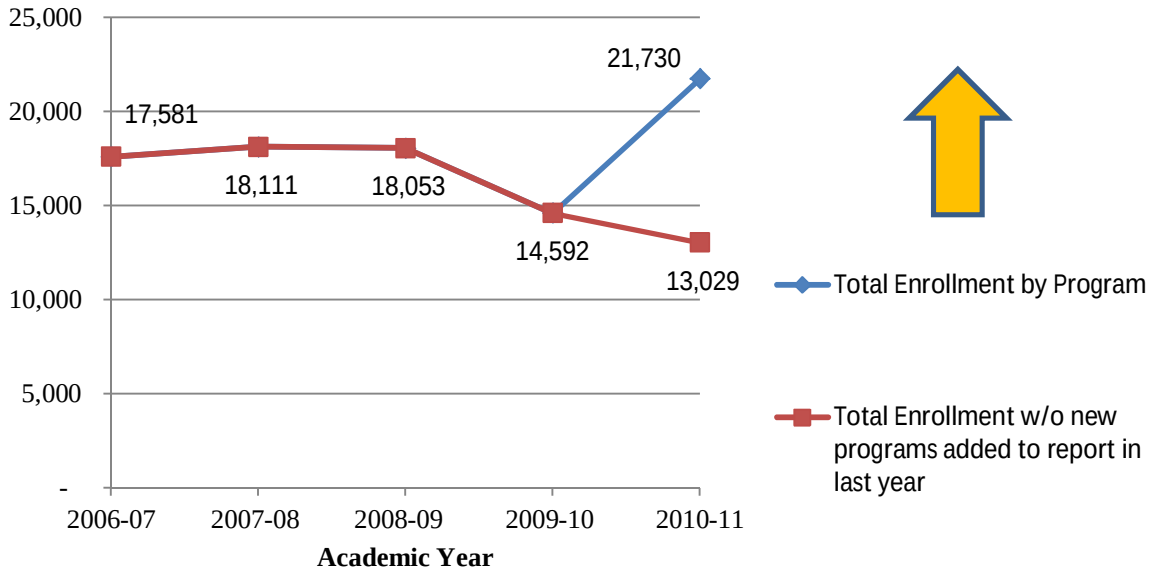
* New to this data set
** (New program adopted by FLDOE in 2010)
***(New program adopted by FLDOE in 2011)

Figures 9. and 10. enrollment information indicates generally downward trend. The gray-shaded rows in Figure 9. show new programs adopted by FLDOE in 2011. All remaining programs in the Figure show a decline in enrollment compared to last academic year (last two columns of Figures 9.). Figure 10. summarizes the overall enrollment numbers. The impact of the six programs listed in shaded rows of Figure 9. are accented as the blue line in Figure 10. and when these are eliminated from the total, the result shows a continuing unfavorable downtrend

extending from 2008 into 2011. Relative to the MSSC pathway for students in high school, the number of enrollees in the Automation & Production Technology program declined. Again, this is an area that should be given special attention to ensure the pipeline is filled with prospective college enrollees.

Of the seven programs in Figure 9. that show data back to the 2006 - 2007 school year, three programs, (Technology Systems, Production Technology and Material Processes Technology) show continuous enrolment decline. Effectiveness Measure CE-5 relates to the growth in the number of schools that adopt a new program in Automation and Production. Figure 9. indicates that this program was adopted by the FLDOE in the 2009-2010 school year and the enrollment went from 37 to 26 in the first two years of the program's existence.

Figure 10. Secondary Level Technology Enrollment by Program



When compared to Figure 10., Figure 11. suggests a reversing favorable trend in the number of graduates from high school technology programs. It's not clear why the number of completions in the technology programs has increased while total enrollment is down. The number of graduates also includes graduates from the newly counted programs noted in Figure 9. and Figure 10 beginning in 2010-2011 (a new measure).

Figure 11. Secondary Level Technology Programs Completions

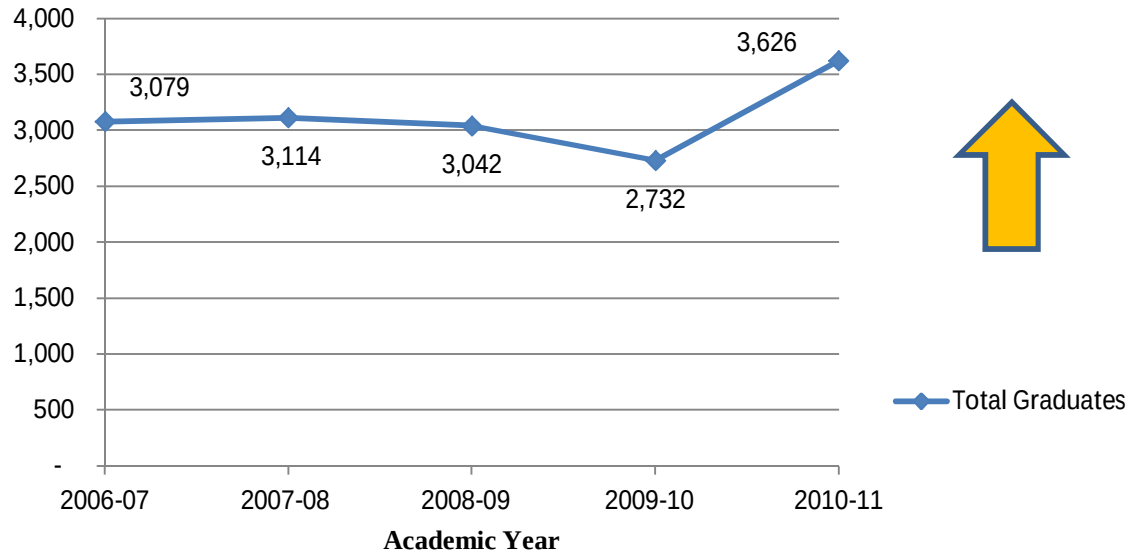


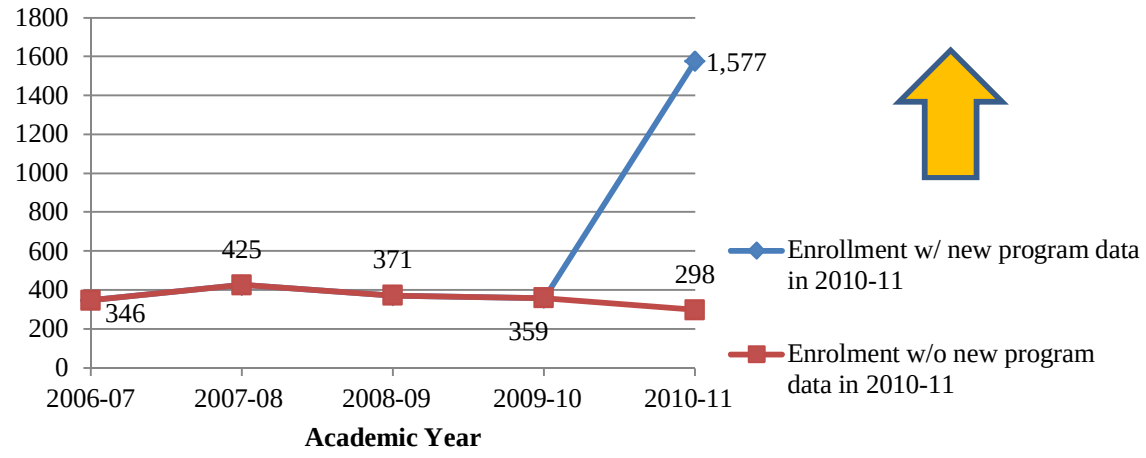
Figure 12. shows data related to the demographics of completions. While total numbers of graduates fluctuates in the last five years, the percentages of white graduates have decreased from 70% to 50%, of female graduates hovers between 17% and 19% , and of combined minority students has increased from 30% to 50%.

Figure 12. Secondary Level Technology Program Graduates & Demographics					
	2006-07	**2007-08**	**2008-09**	**2009-10**	**2010-11**
Technology Program Total Graduates	3,079	3,114	3,042	2,732	3626
Percent Change Year to Year		1%	-2%	-10%	33%
% Technology Program Graduates	18%	17%	17%	19%	17%
Male Graduates	2,515	2,530	2,472	2,231	3,029
Female Graduates	564	584	570	501	597
% Female of Total Graduates	18%	19%	19%	18%	17%
% White Students	70%	54%	53%	48%	50%
% Combined Minority Students	30%	46%	47%	52%	50%

The next charts, Figures 13., 14., and 15. represent effectiveness measures CE-7 and CE-10, relating to Post-Secondary Adult Vocational School (PSAV) integration of the MSSC standard, enrollments, and completions.

Figure 13. Post-Secondary Adult Vocational (PSAV) Enrollments, OCP, and Completions					
	2006-07	**2007-08**	**2008-09**	**2009-10**	**2010-11**
Enrollment (with newly reported programs in 2010-11)	346	425	371	359	1577
Percent Change Year over Year		23%	-13%	-3%	439%
Enrollment (without newly reported programs in 2010-11)	346	425	371	359	298
Percent Change Year over Year		23%	-13%	-3%	-17%
Occupational Completion Point (OCP) Earners	290	414	333	340	2,279
Full Program Completer	37	34	33	43	522
Percent Change Year over Year		-8%	-3%	30%	1114%
Number of Programs	18	15	5	5	9
Number of Participating Institutions	11	8	9	12	30

Figure 14. PSAV Enrollment



Figures 13. and 14. show mixed results. The enrollment trend is unfavorable, based on data from programs that have been collected since the 2006-2007 academic year (red line in Figure 14.). The favorable uptick in the enrollment data in 2010-2011 year (blue line in Figure 14.) is due to the new collection of data from existing programs deemed related. More details are available in a FLATE report, attached as Appendix A, which further describes the detailed data discussed above in aggregate.

Figure 13. also shows data related to the number of PSAV participating institutions. The number of institutions steadily increasing from 8 to 30 from the 2007-2008 to 2010-2011 academic years, is a positive indication of the integration of the MSSC standard into current frameworks.

Figure 15. PSAV Completions

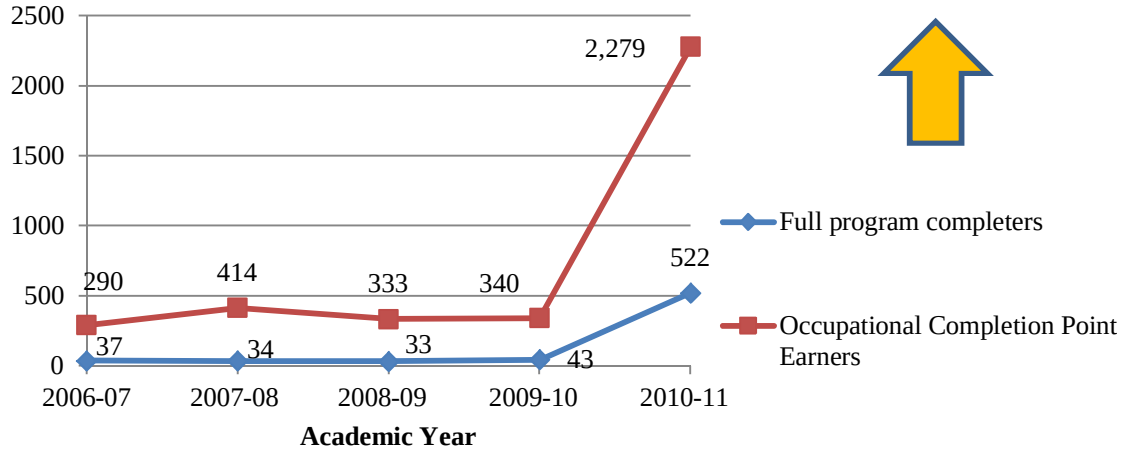


Figure 15. shows overall strong and favorable trends in the number of full completions and the number of occupational completion point (OCP) earners. An OCP is associated with a job title in the Dictionary of Occupational Titles provided by the Department of Labor. An OCP may be earned at predetermined points within a CTE program of study and is based upon successful completion of the student performance standards and/or a specific course or courses.

The following chart and data, Figure 16., relate to Curriculum Effectiveness Measures CE-12 and CE-13, and are precursors for curriculum effectiveness. FLATE aligned the Engineering Technology (ET) Degree Curriculum frameworks, a State required and reviewed student standards document for the academic program, with the skill standards of the MSSC credential. This intense frameworks development process was needed to support the statewide articulation of the MSSC Credential to the degree program for college course credit. In addition, FLATE validated the alignment results with Florida industry to ensure that the ET degree program meets industry workforce needs.

However, alignment development and verification does not ensure the competencies are taught or mastered in college classrooms. Faculty commonly use standard text books and text book driven academic course syllabi to formulate classroom lessons. Although there is often much overlap, gaps do occur between the State Curriculum Frameworks and the academic course chosen by colleges to support the frameworks. Therefore, the skills needed for passing the MSSC certification test may not be aligned to the academic courses (ET Degree core courses).

To close the alignment loop without insisting that faculty use a particular "packaged" or "test prep" curricula, MSSC test results from students in ET Core academic courses are being acquired, and results to date are reported below. FLATE began this activity in the spring of 2010 by covering the test fees for any E.T. Degree student who takes the MSSC certification test aligned to a course they were enrolled in. Five colleges have reported results from three MSSC certification tests: Quality, Safety, and Manufacturing Processes and Production; results are summarized in Figure 17. FLATE continues supporting college student testing to assure validating the integrated knowledge provided in the academic ET core courses prepare students for the aligned MSSC test.

Figure 16. MSSC Certification Test Performance

Certification Test Topic	Population; Number of ET Degree Students Taking the Test	Percentage who Passed the Test
Quality	31	77%
Safety	61	90%
Manufacturing Processes & Production	35	77%

Test score results through December 2011 show some potential test performance gaps, indicating that targeted curriculum development and/or professional development activity might be needed. FLATE provided workshops addressing this issue at the Spring and Fall 2011 ET Forums. As a result of the workshops, common course outcomes have been developed for three of the four core courses that align to both the state curriculum frameworks and the MSSC standards. Suggested course sequence to better prepare students for MSSC testing was also defined and

agreed upon by the ET Forum group, with Maintenance Awareness remaining for testing and alignment.

Effectiveness Measure CE-11 addresses the Florida ET Forum as an indicator of curriculum effectiveness. The ET Forum is an important professional development vehicle since it brings together the diverse and geographically dispersed colleges with common issues and challenges. The Forum is an event innovated and coordinated by FLATE, which provides many benefits to the attendees, as noted in the surveys and comments from the participants as well as its regular and stable attendance; typically 20 or more people, with attendance often affected by geographic location. The ET Forum is held twice annually, once each in the spring and the fall. More data related to the ET Forum as an element of professional development will be discussed later in **Section C.**

Figure 17. Number of ET Forum Participants

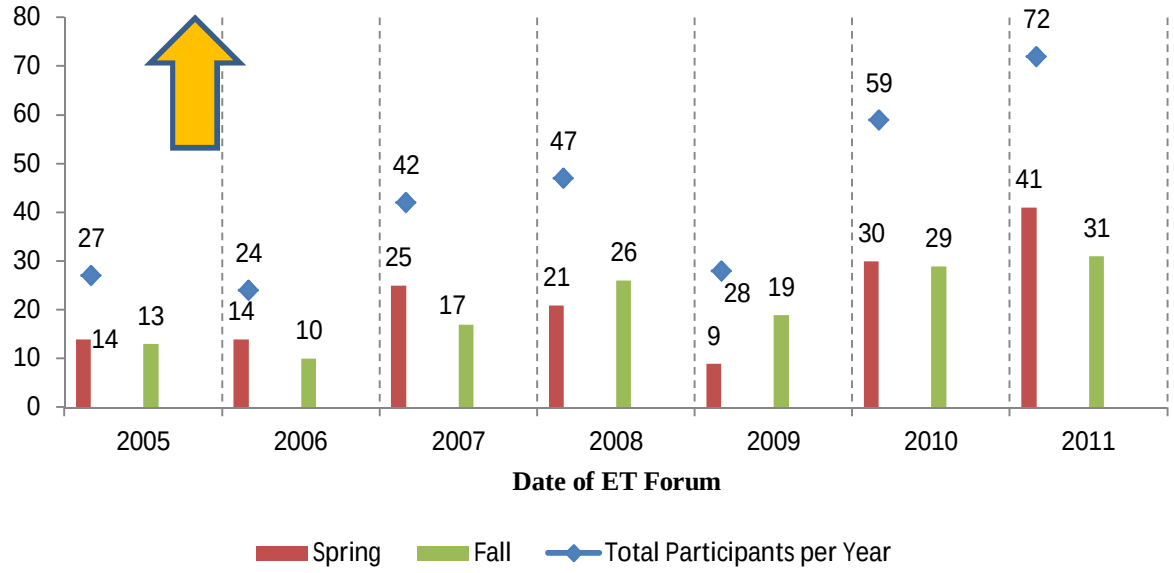


Figure 17. shows steady growth, except in year 2009, in the number of participants in the ET Forum year to year (blue diamonds). The chart shows individual annual totals as well for Spring (red columns) and Fall (green columns) components.

Regarding Effectiveness Measure CE-14 relating to high school certifications in the MSSC production technician standard (CPT) built into high school and college frameworks, the

following Figure 18. shows the total number of certifications achieved. As is obvious, nearly one third of all certifications in FLATE frameworks have been accomplished in high school programs.

Figure 18. Production Technician Certifications (CPT) Achieved						
Year	**2007**	**2008**	**2009**	**2010**	**2011**	**Totals**
Total CPTs	11	143	103	99	105	461
High School CPTs	N/A	N/A	N/A	N/A	N/A	137
High School as % of Total						29.7%

Effectiveness Measure, CE-4: FLDOE Curriculum Frameworks documents, is satisfied in that FLATE curriculum efforts have been recognized by the Florida Department of Education and there are approved frameworks documents for one college program (ET Degree) and one high school program (Automation and Production Technician).

Section B. Effectiveness of Outreach and Recruitment:

FLATE's Outreach and Recruitment goal is to provide an effective outreach platform for Florida's high schools, colleges, and industry to access information related to the requirements for, and impact of manufacturing education. FLATE's *Made in Florida* (MIF) campaign is the manifestation of that outreach platform and is the continuing centerpiece of outreach to schools, faculty, and students. It is a multi-media effort including videos, student and teacher industry plant tours, industry-based, online lesson plans for K-20 educators, an industry sponsored career guidance advertorial, summer robotic camps, and a student-friendly website focused on education and careers.

FLATE has also enthusiastically embraced other popular student friendly communication tools

and activities. FLATE is using social networking sites such as Facebook, YouTube, and TeacherTube. FLATE also annually sponsors and partners with FIRST Robotics, SkillsUSA, and Technology Student Association (TSA) competitions to attract the attention of the current generation of career and technical education entrants. FLATE uses online and in-person activities to engage students, educators, and industry representatives to meet outreach goals.

FLATE has not abandoned the more conventional electronic message delivery mechanisms. The FLATE team publishes a monthly newsletter in blog format, the *FLATE Focus*. It is distributed to over 1,000 individuals across Florida and the nation comprised of industry, government, educational, workforce, and community partners. Since spring 2007, the *Focus* is an effective platform to discuss a wide cross-section of topics that are targeted to inform its readers about professional and educational opportunities in high-tech manufacturing, including biotechnology & bio-manufacturing in Florida. Articles highlight local industry partners and their roles in positioning Florida as a high-tech hub in the nation, and spotlights FLATE's widespread outreach, curriculum and professional development initiatives, as well as success stories of its partners.

While contributing to outreach efforts, in 2011, the *FLATE Focus* newsletter caused almost 4,200 site visits and over 8,800 page views generated from distribution to 16,455 email addresses. Figure 19. depicts this data add addressing Effectiveness Measure OE-6. The newsletter has an impact on website hits on the FLATE website, addressing Effectiveness Measure OE-8. Data regarding the website are displayed later in Figure 21. and Figure 22.

Figure 19. *FLATE Focus* Newsletter Electronic Distribution & Visits

Year	Monthly Distribution to an Annual total of…	Total Annual Visits	Total Annual Pageviews
2009	7,310	2,279	
2010	12,586	3,744	
2011	16,455	4,197	8,842

In 2011, FLATE initiated an effort to benchmark newsletter performance. One other ATE Center was selected with a similar mission and similar newsletter format and distribution. Out of 40 ATE Centers examined, the majority either do not offer newsletters or do not offer online newsletters. Additional information should be pursued to select other newsletters considered above average or the best of their type so that process similarities can be identified and best practices learned.

In summary FLATE's *Made in Florida* campaign is inclusive of all media venues. It also provides a "one-stop" source for students and stakeholders, and shareholders. It provides ready to use online collateral materials including: community college program maps, manufacturing career Job Journey (wage information), listings of Florida manufacturers, *NEXT* advertorial, *In-Demand* magazine article on Robotics & Advanced Manufacturing, degree program fliers, technical and trade school information, *Made in Florida* website information, links to manufacturers, ET Degree Programs, *Hire an ET Grad*, FLATE's social networking sites, and an email address to contact FLATE for help and additional information.

One facet of outreach to students is accomplished through the FLATE and industry partnership project that champions the *Made in Florida* Manufacturing advertorial in the *Florida Trend: NEXT* magazine. This career guidance magazine is published annually by Florida's leading business magazine, *Florida Trend*, and is distributed to high schools all over the State. FLATE, with the Manufacturers Association of Florida (MAF) has consistently attracted industry partners and sponsors to fund the annual advertorial. The *NEXT* outreach effort has had the support of industry sponsors who have contributed more than $150,000 plus in-kind support over the last six years. Copies of *NEXT* magazine are distributed annually by high schools to secondary students statewide. Students indicate interest in the message by mailing a response card or visiting a website address and filling out an online response card. All students who provide a valid email address receive a personal email from FLATE. All inquiries, including those with no or invalid email addresses, are forwarded to the appropriate regional postsecondary or technical school partners based on zip code matching. Forty-five colleges and technical schools receive regular lists of prospective student leads in their service

areas for follow up. Inquiries are forwarded electronically by FLATE to these partners on a monthly basis, along with online collateral assist and informative materials.

The *Made in Florida* manufacturing advertorial in *Florida Trend's NEXT* magazine reaches hundreds of thousands of Florida high school students, informing them about careers in modern manufacturing, and providing the guidance to make the educational choices needed to obtain these careers. These advertorials trigger student interest in manufacturing as a viable and lucrative career pathway and promotes the image that Florida's manufacturing industry provides challenging, state-of-the-art technology jobs with high wages. Figure 20., addressing Effectiveness Measures OE-1, OE-2, and OE-3, shows the history of *NEXT Magazine* distribution and interest responses.

Figure 20. NEXT Magazine Distribution & Interest Responses

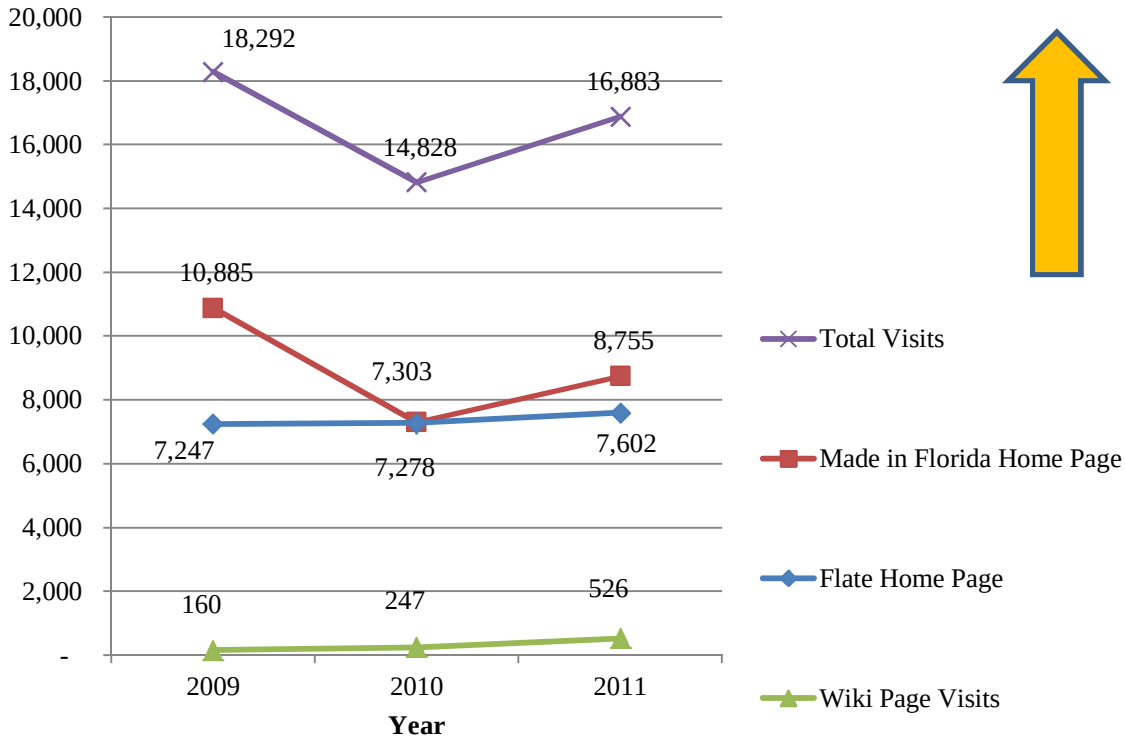
Academic Year of Distribution	Magazine Size (Number of Pages)	Total *NEXT* Distribution	Total Number of Responses Received by *NEXT*	Total Number of Responses Due to Manufacturing Advertorial	Responses Received by FLATE as % of *NEXT* Total
2006-07	100	750,000	580,319	4,360	8%
2007-08	104	750,000	803,989	4,698	6%
2008-09	96	750,000	805,461	5,762	7%
2009-10	76	400,000	417,829	2,831	7%
2010-11	70	400,000	250,789*	2,301	8%

Due to a reduction in funds from the Florida DOE, *Florida Trend* has reduced both the page count and distribution of the *NEXT* magazine in the last two to three years, as is evident in the data. Additionally, it is obvious there is a large reduction in the number of responses in 2010-2011, The NEXT publisher says that is due to several factors, including the fact that active links were designed into the digital edition this last year which allowed students to click on the ads and go directly to the advertiser websites for information, entirely bypassing the historical route of funneling responses through Florida Trend. Nevertheless, the FLATE/manufacturing share of responses remains stable at about 8% of the total. Of those, response from females outpaces those from males by about three to one (i.e. 72% in 2009-2010 and 74% in 2010-2011). The advertorial has provided an important link for Florida's manufacturers to reach tomorrow's workforce and promote positive awareness of manufacturing careers and education.

As a follow up to the effectiveness of the NEXT advertorial and the collateral email materials forwarded to responders, FLATE surveyed 1,842 of them. The survey asked: *Was the information you received via email useful in helping you learn about high tech, high wage manufacturing careers in Florida and the education needed to obtain these careers?* Of the 33 responses received (2% response rate) 26 students (79%) answered "yes" and 7 (21%) answered "no", but did not provide further qualitative answers as requested in the survey.

The following set of charts in this section address Effectiveness Measures OE-5, OE-7, and OE-8. Figure 21. shows a high number of FLATE, *Made in Florida*, and FLATE wiki page visits 2009 through 2011.

Figure 21. Visits to Websites



As seen in Figure 22., the average monthly number of visits is higher than two comparatives. One of the comparatives, the EvaluATE Center reports that use of their site's home page has

remained steady, with no significant growth or decline between 2010 and 2011; a finding similar to FLATE's page performance as seen in Figure 21.

Figure 22. Average Monthly Web Page Visits	
FLATE Home Page	634
Made in Florida Home Page	730
Comparison: Combined Avg. for 8 NSF-ATE Centers	472
Comparison: Evalu-ATE Center Home Page	431

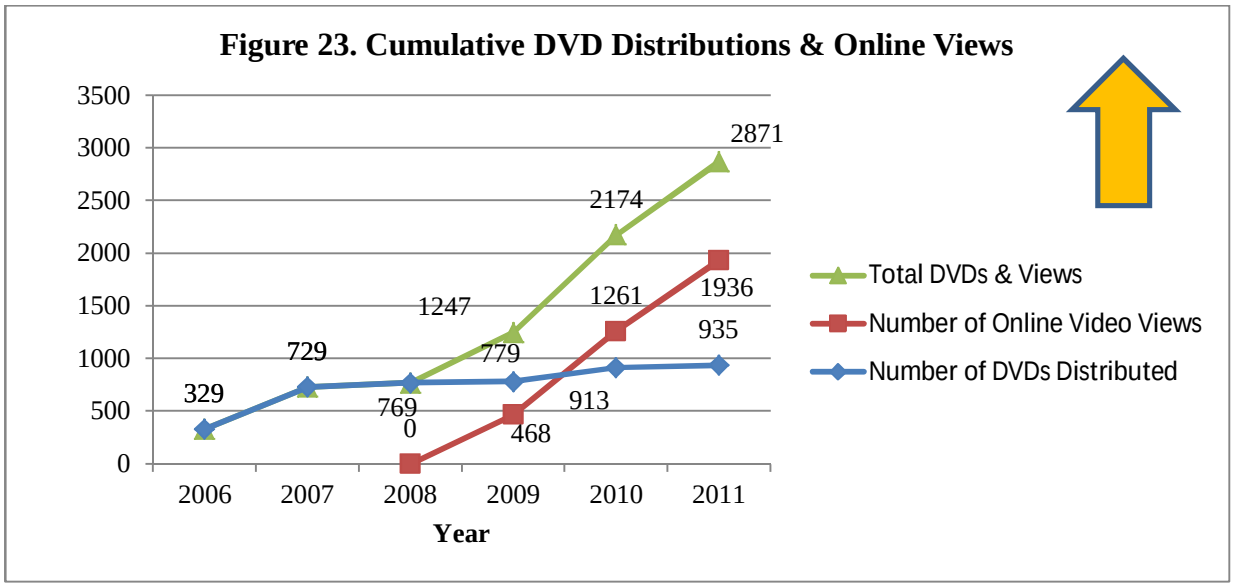


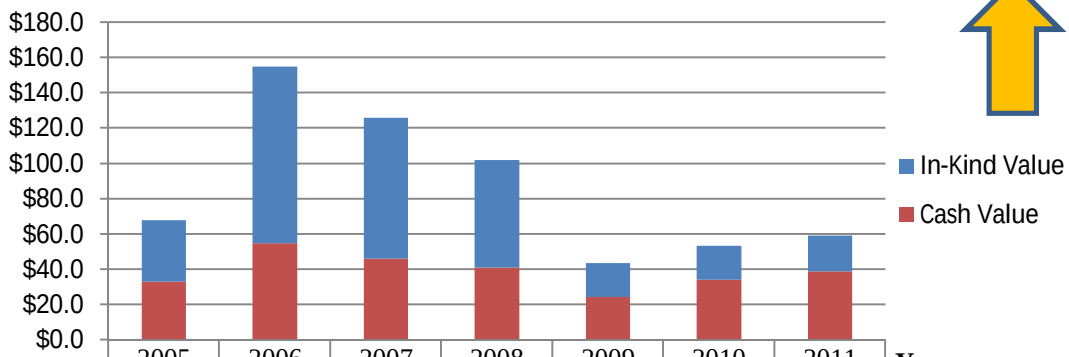
Figure 23. shows an overall increase in the number of opportunities viewers take to see the MIF video, English- and Spanish-language versions through 2011. As expected, during the transition to the online distribution format the number of DVDs distributed each year remains low, the cumulative number of views of the video on the FLATE and the *Made in Florida* websites continues to grow steeply.

In addition to its use of virtual media to reach students and stakeholders alike, FLATE has taken other actions to reach out to geographically diverse areas of the State, especially in the southeastern region. FLATE had contracted with the South Florida Manufacturers Association (SFMA) to conduct outreach to educational institutions as well as manufacturers. The SFMA promoted FLATE activities while recruiting additional stakeholders and partners among industry

and academic organizations, to bolster recruitment of students to the prospect of a career in high technology manufacturing. Additionally, the annual National Visiting Committee meeting was scheduled and held at a South Florida manufacturing facility for the first time. As a result of this activity, one or two of the south Florida region state colleges are gaining interest in adoption of the ET Degree program. Likewise, in the southwest region of the State, although there is no formal contract with the manufacturers association there, marketing assistance was rendered and discussions are now ongoing with Edison State College in Fort Myers.

The next chart addresses Effectiveness Measures OE-9 and OE-10.

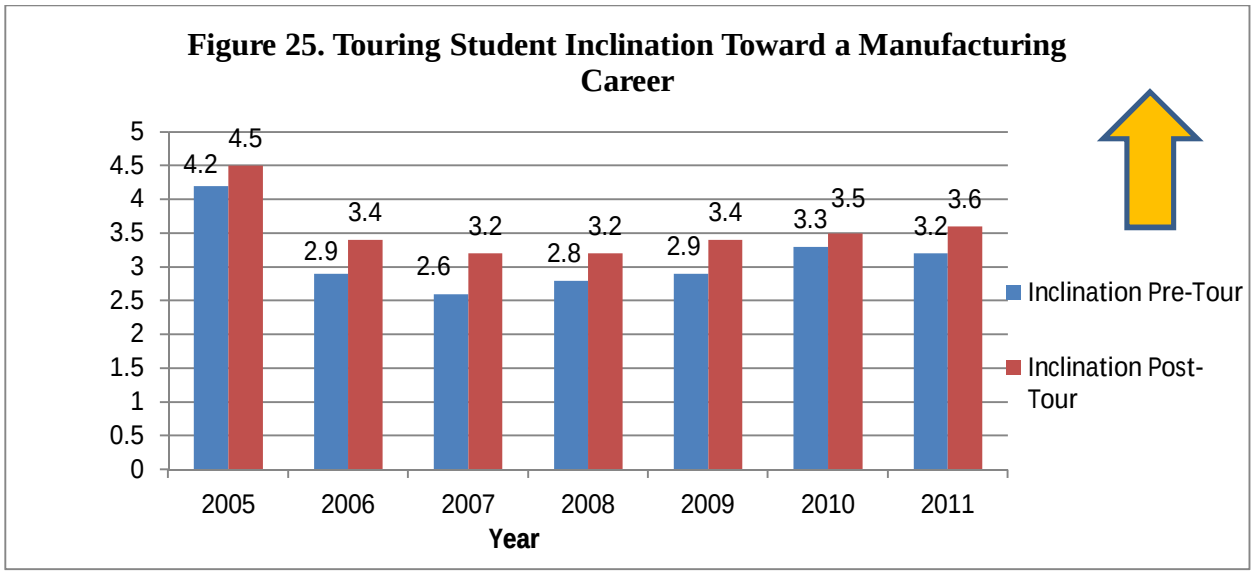
Figure 24. Overall Value of Industry Contributions (Thousands of Dollars)



	2005	2006	2007	2008	2009	2010	2011
In-Kind Value	$35.0	$100.0	$80.0	$61.0	$19.5	$19.4	$20.3
Cash Value	$33.0	$55.0	$46.0	$41.0	$24.3	$34.2	$38.8

Data in Figure 24. indicate the overall value of cash and in-kind contributions from industry and partners to support various FLATE activities including the *NEXT* manufacturing advertorial. This chart indicates an unfavorable trend in contributions from 2007 to 2009 which happens to coincide with the economic downturn suffered in the manufacturing sector. There had been hesitancy on the part of manufacturers to donate funds generally, although the trending is favorable since 2009.

FLATE has facilitated 153 industry tours through 2011 for 3,386 middle and high school students and 363 educators. Figure 25. addresses Effectiveness Measure OE-4.



The figure above shows survey results related to industry and plant tours, collected at the end of each tour, conducted for students, and depicts the level of agreement, by attendees, with these selected survey statements, relating to the comparison of the students' inclination toward a manufacturing career before and after the tour:

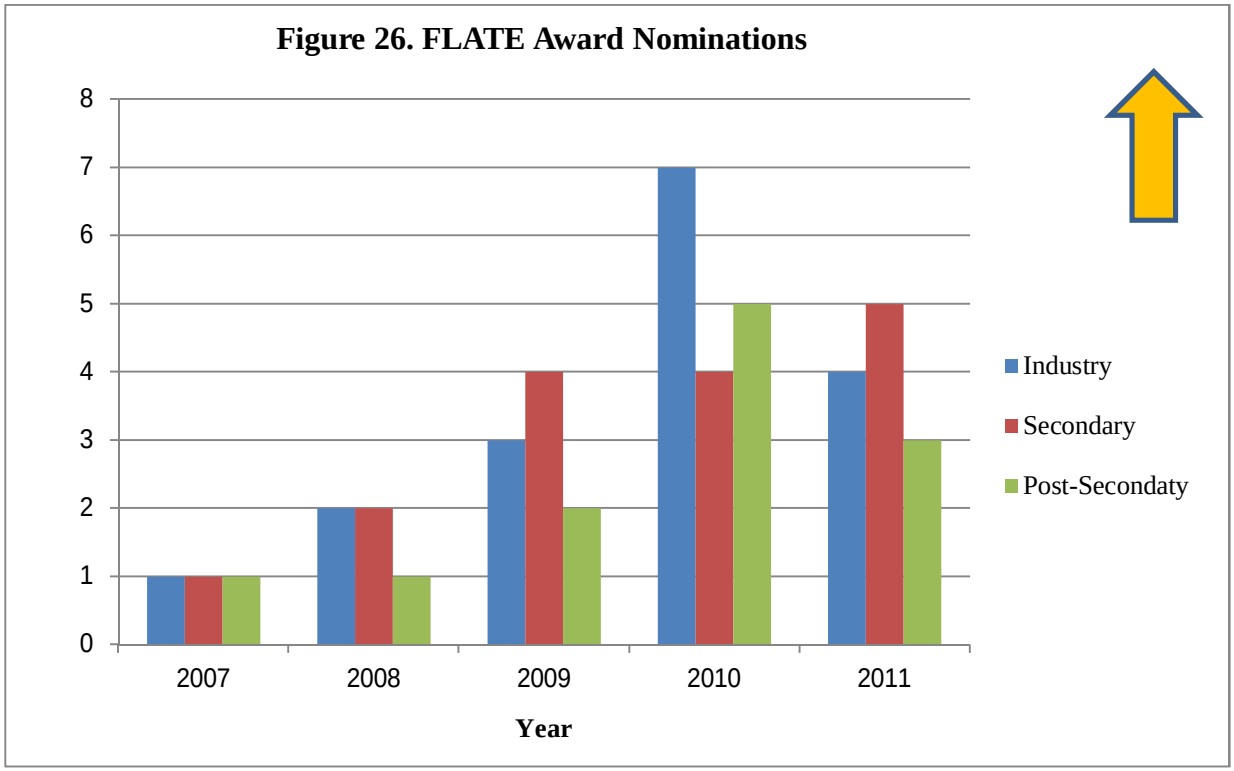
- Statement #10: "I was considering a career in manufacturing before the tour". (pre-tour)
- Statement #13: "I am now considering a career in manufacturing or related technical industries". (post-tour)

These annual results show that in every year, the aggregate results are favorable in that students were more inclined toward a career in manufacturing after having completed the tour. Student responses to other survey questions also indicate high levels of their perceptions of the relevance of the tour and awareness of the importance of manufacturing skills.

To disseminate and institutionalize FLATE experiences and knowledge, the staff has compiled, published, and distributed a best practice guide about the student tour activity. It is intended to help interested organizations, such as the regional manufacturer associations, plan, conduct, and follow-up successful student tours. The guide is available both in print and online.

There are no data currently collected which address the other element of Effectiveness Measure OE-4, relating to industry perceptions relating to student tours.

Figure 26. refers to Effectiveness Measure OE-12 regarding the number of nominees for the FLATE awards. Each year FLATE recognizes three individuals, one from industry, one from the community or state college or technical school systems, and one from the secondary level school system for outstanding contributions to the awareness of technical education, and in support of the manufacturing workforce. The award ceremony is held jointly with the Manufacturers Association of Florida (MAF) at the MAF Manufacturing Summit every year in the fall.

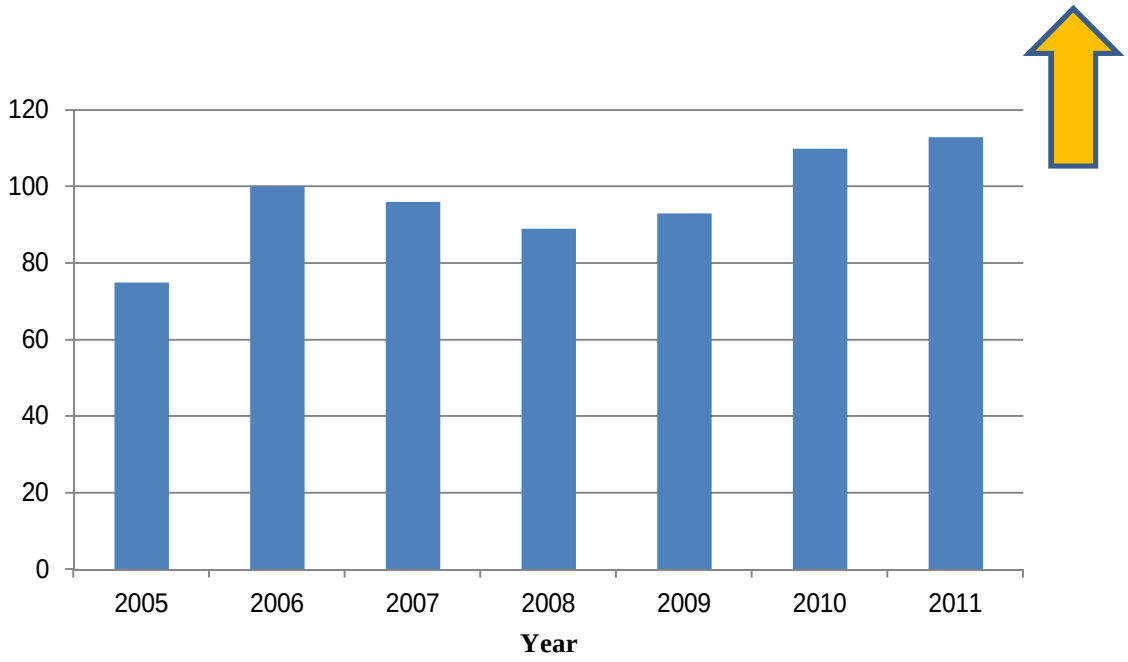


The figure shows favorable increase in the numbers of nominations made for the Secondary Level Award since inception in 2007. The results for the Industry and the Post-Secondary nominations are both up since 2007, 2008, and 2009, but down from very high levels last year. This outreach and recognition event is valued by partners and gives FLATE high visibility to its stakeholders in the education community and industry.

A significant part of FLATE's outreach efforts is participation in public events, presentations to raise awareness for advanced manufacturing, conferences, seminars, and the like. Effectiveness Measure OE-11 is addressed by Figure 27. which shows the number of annual events in which

FLATE took part and used for outreach and networking purposes. The overall trend continues favorably, especially in the last four years with a steady increase in the number of events and, data support an increase of the organizations and people exposed to FLATE.

Figure 27. Number of FLATE-Involved Outreach Events



Figures 28. and 29. and the results discussed in the next few paragraphs, address Effectiveness Measures OE-13 and OE-14. FLATE hosts several robotics camps each summer, and works with sponsors and partners in other locations, targeted at middle and high school students to enhance the understanding of science, technology, engineering and mathematics (STEM), and to showcase robotic applications in high-tech manufacturing operations. The effort represents partnership between FLATE, and several academic and industry partners to cultivate STEM, hands-on, technical, leadership, professional, and team-building skills. Although there are a number of robotics camps offered by other organizations around the State, FLATE camps are unique in providing STEM-focused opportunity to highlight robotic applications in high-tech manufacturing operations and showcase advanced manufacturing companies and their products.

Figure 28. Summer Robotics Camp Summary											
Year	FLATE # of Campers	CARCAM # of Campers	FLATE # of Males	FLATE % of Males	CARCAM % of Males	FLATE # of Females	FLATE % of Females	CARCAM % of Females	FLATE # of Camps	CARCAM # of Camps	FLATE # of Girl Camps
2008	20								1		0
2009	60	58			86%			14%	3	3	0
2010	200	140	134	67%	74%	66	33%	26%	9	6	2
2011	194	79	136	70%	89%	58	30%	11%	11	4	0

Figure 28. depicts the summary of camps conducted to date. Outreach has increased by conducting more camps this past year than ever before, although the number of campers is slightly less. The number of females participating is also only slightly less than last year, despite the fact that there were no all-girls camps conducted in 2011.

In 2010 FLATE selected the CARCAM ATE Center in Alabama as a comparison for Robotics Camps performance. There are these differences in the programs:

- FLATE's camps are targeted primarily at middle school students to stimulate interest in STEM classes; CARCAM's camps at high school students for college recruitment.
- CARCAM follows up with the High School transcripts to track whether Camp students enroll in STEM elective classes; FLATE surveys parents during the next school year following the summer camp.

Figure 28. shows comparisons to CARCAM in the total number of campers, percentages of numbers of male and female campers, and the total number of camps. Although the CARCAM camp approach is not quite analogous in purpose, the FLATE performance in each of these areas compares favorably.

Effectiveness of the camps is judged by a follow-up survey of the campers and their parents. Additionally, follow-up surveys, initiated in 2010, were sent parents to judge whether camp attendance had a positive effect on their students and their choice of classes taken during the following school year. Response rates were about 16% and 12% in 2010 and 2011 respectively. Figure 29. Shows the parents' Agree/Strongly Agree responses to the survey statement:

"My student was inspired by the camp experience to enroll in challenging STEM courses [the school year following the summer camp]."

Figure 29. Percentage of Agree plus Strongly Agree Responses		
Follow-Up Year	2010	2011
% of Agree + Strongly Agree	94%	100%

As described in last year's evaluation report, FLATE has institutionalized the Robotics Camps initiative, through the development and distribution of a 28-page Best Practices Guide. This reference manual is available both in print and online and is intended for use by other organizations wanting to initiate and run a similar program. The guide addresses issues important to a planning and conducting a successful camp. The guide deals with costs and funding, equipment, facilities, communications and marketing, and curriculum. Requests for the guide have come from K-20 as well as from 4-year institutions across the country.

One other aspect of FLATE outreach, although not noted specifically in Effectiveness Measures, is the concept of scale-up. According to the NSF-ATE Synergy Collaboratory (June 2011 Report), an important objective of NSF-ATE Center scale up activity includes "expanding a clientele or number of students served, increasing the reach of a project so that additional business, colleges, or communities are involved". FLATE's scale up efforts have impacted everything from increased newsletter and website performance to increased participation in professional development workshops, more than doubling the scope of its contact area since 2010. These data reported in Figure 30. are gleaned from FLATE's contact database used for dissemination of information about FLATE, its activities and impact, *FOCUS* Newsletter, advanced manufacturing news including the needs and opportunities of employers in the advanced manufacturing industry, college and industry partners and their activities, general outreach, professional development opportunities, and promotion of online curriculum and services. FLATE's scale up activity has expanded the scope of its reach and impact on stakeholders.

Figure 30. FLATE Contact Scale-Up Activity			
Contact Category	**As of June 2010**	**As of June 2011**	**As of December 2011**
Industry	317	377	413
Workforce Development, Training & Vendors	82	86	111
Secondary Education	242	304	707
Post-Secondary Education	411	620	1091
Manufacturers & Professional Associations	27	33	36
Economic Development, Government & Community Organizations	54	69	229
Totals	1133	1489	2587

Section C. Effectiveness of Professional Development Efforts:

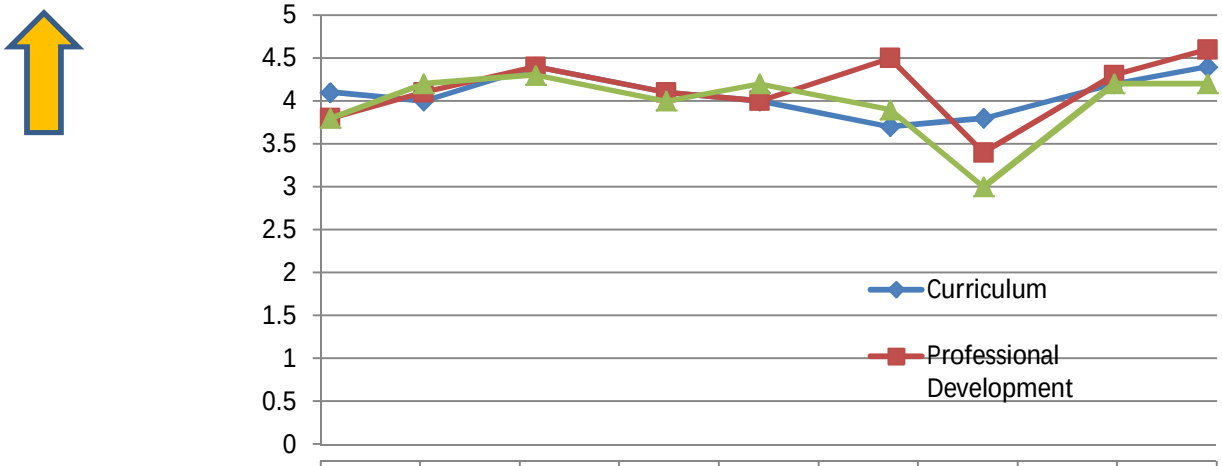
Professional Development is a key element of the FLATE strategy, which supports K-20 STEM education and college engineering technology and related technology programs. FLATE's goal is to present professional development opportunities for technical faculty to develop, refine, or certify their knowledge base within manufacturing and its related enabling technologies and educational pedagogies. To maximize immediate impact many of these activities follow a just-in-time delivery approach.

Professional development activities enable faculty and other involved stakeholders to facilitate the implementation and use of FLATE-developed tools in academic and industry settings. FLATE provides a number of training and development opportunities throughout the year in a number of different venues including stand-alone workshops, online webinars, the Forum on Engineering Technology (ET Forum), and other partner projects. Relative to the other goal related activities, FLATE professional development projects were delayed in the initial phases of FLATE existence to expedite the degree development and outreach activities. As noted earlier in this report, the Florida ET Forum is an important professional development vehicle and provides

a place for colleges to confront and discuss common issues and challenges.

In 2011, the focus of the professional development workshops has been on MSSC alignment into consistent technical core course outcomes. A satisfaction survey was provided to participants at each workshop to collect information to improve performance and gauge the relevance of the activities provided. Figure 31, addressing Effectiveness Measure PDE-1, reflects participant data regarding the ET Forums, which has been scored by participants at favorably high levels on a Likert scale of Poor (1) to Excellent (5).

Figure 31. Attendee Satisfaction by Event Type - ET Forum



ET Forum Date	Oct-07	Mar-08	Sep-08	Apr-09	Sep-09	Apr-10	Sep-10	Apr-11	Sep-11
Curriculum	4.1	4.0	4.4	4.1	4.0	3.7	3.8	4.2	4.4
Professional Development	3.8	4.1	4.4	4.1	4.0	4.5	3.4	4.3	4.6
Recruiting	3.8	4.2	4.3	4.0	4.2	3.9	3.0	4.2	4.2

The ET Forum has an impact on the development and adoption of the ET Degree program. The Forum's low cost, relatively informal meetings have seeded a close network of faculty and administrators focused on the everyday workings and issues of related technical programs. It has resulted in a number of shared projects, grant proposals, and grants; mentoring for new and/or evolving programs; and a strong partnership of institutions that have discovered a venue where they can share the same mission and goals and express their differences within a spirit of cooperation, not competition. Attendees at the Forum regularly provide input to the Florida

Department of Education (FLDOE), Florida workforce organization, and economic developers, and various career and technical education organizations in Florida.

The structure and operating characteristics of the ET Forum serve as a model organization for other disciplines and career clusters in Florida as well as technical disciplines in other states. This exportable model brings the state and community colleges and their university counterparts together with representatives from the Florida DOE Workforce Education Division to discuss common issues, best practices, institutional and programmatic news, and to seek solutions that better unify the programs serving students, industry, and academic institutions. FLATE uses the ET Forum to continue its curriculum development, reform, and alignment efforts through a workshop on Friday afternoons at the Forum.

As Effectiveness Measures, a matter of importance in Professional Development, FLATE monitors PDE-2 and PDE-3, individual participation in the ET Forum and other FLATE-initiated workshops. Data reported in Figures 32. and 33. are pertinent and address PDE-2 and PDE-3.

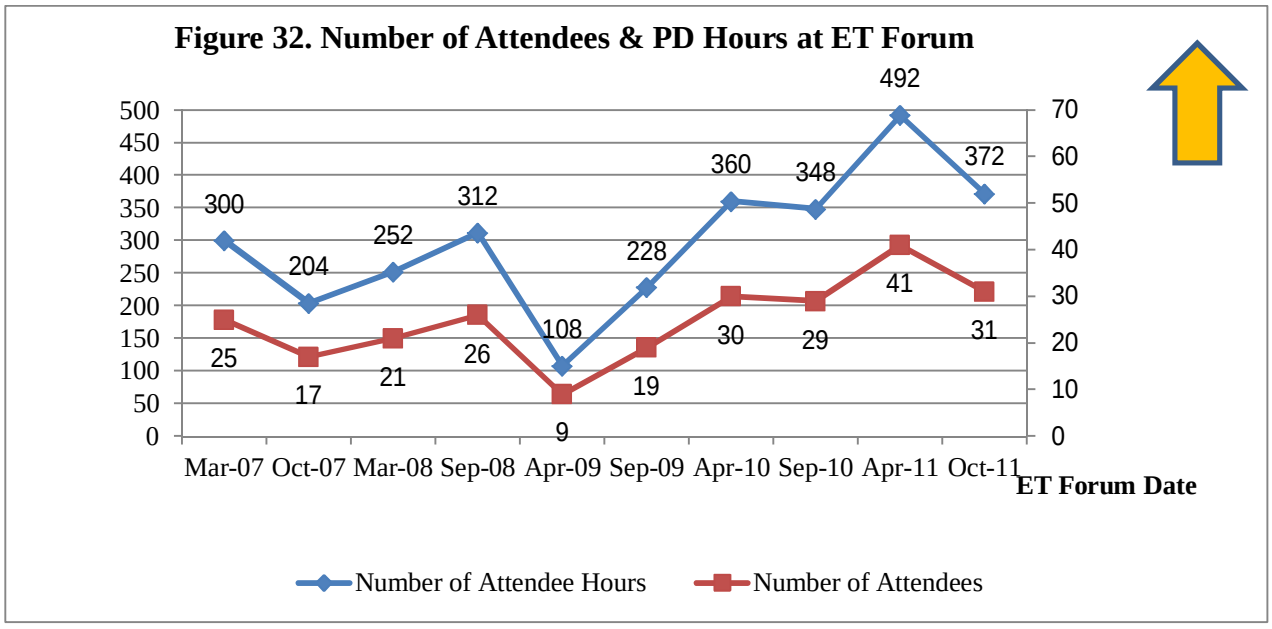


Figure 32. shows an unsteady but overall favorable trend in the number of participants and their professional development contact hours at the series of ET Forums conducted twice annually since Spring of 2007.

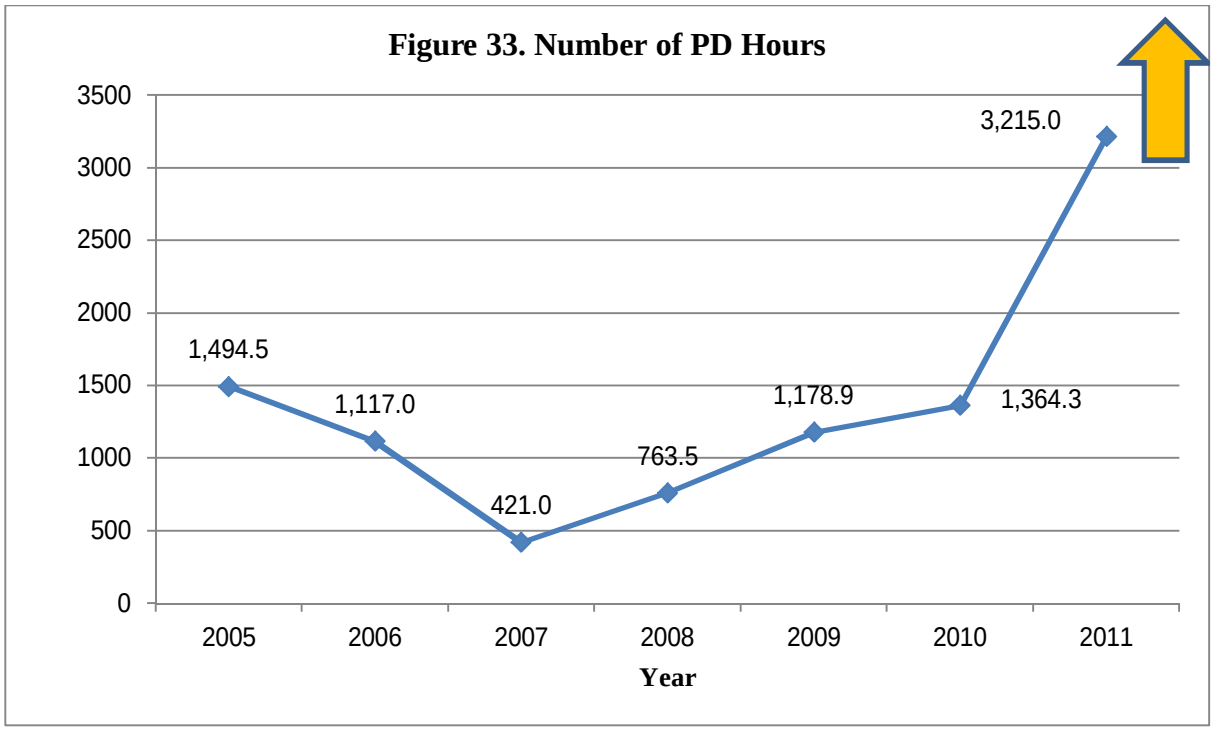


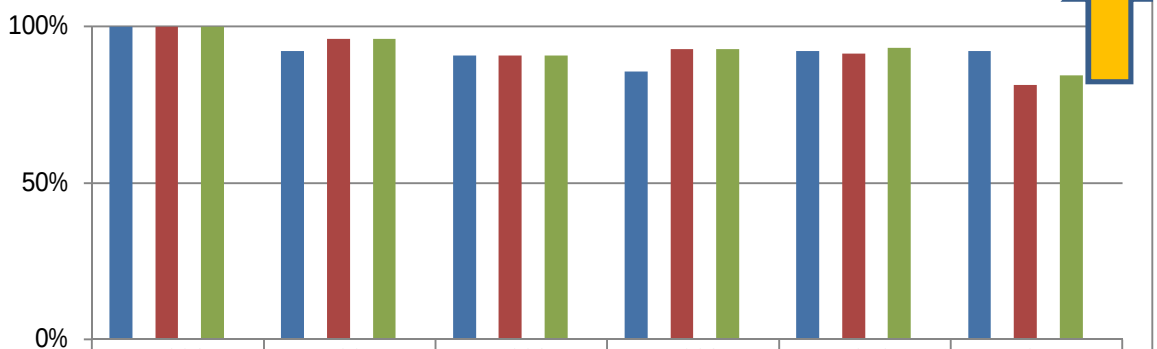
Figure 33. shows a significant increase in the number of professional development hours provided by FLATE. There are a number of factors which may have contributed to this. These include: full staffing of FLATE in 2011 by filling an open full-time curriculum coordinator position playing a major role in offering professional development (PD) presentations and workshops; FLATE offers multiple PD functions at large events, with panel presentations, workshops, and presentations over multiple days at the same event, and even offering multiple events on the same day; PD venues reaching larger audiences and better attended; PD expanding to online webinars with FLATE staff as subject matter experts; and growing requests for FLATE PD offerings for the School District of Hillsborough County K-12 teachers.

Figure 34., further addressing Effectiveness Measures PDE-1 and PDE-4, reflects participant perception of the usefulness in the workplace of the Toothpick Factory Professional Development event. The Toothpick Factory is a hands-on activity created by FLATE, set in a manufacturing context that stimulates discussion and awareness about a wide range of soft skills that are essential in today's work and personal relationships. Three Toothpick Factory soft skills communication experiences were conducted by FLATE in 2011, serving 134 participants. The

workshop is also available to other centers and has impacted, to date, over 500 students and educators nationwide.

To assess effectiveness of the Toothpick Factory, FLATE uses the data shown in Figure 34.

Figure 34. Toothpick Factory Effectiveness



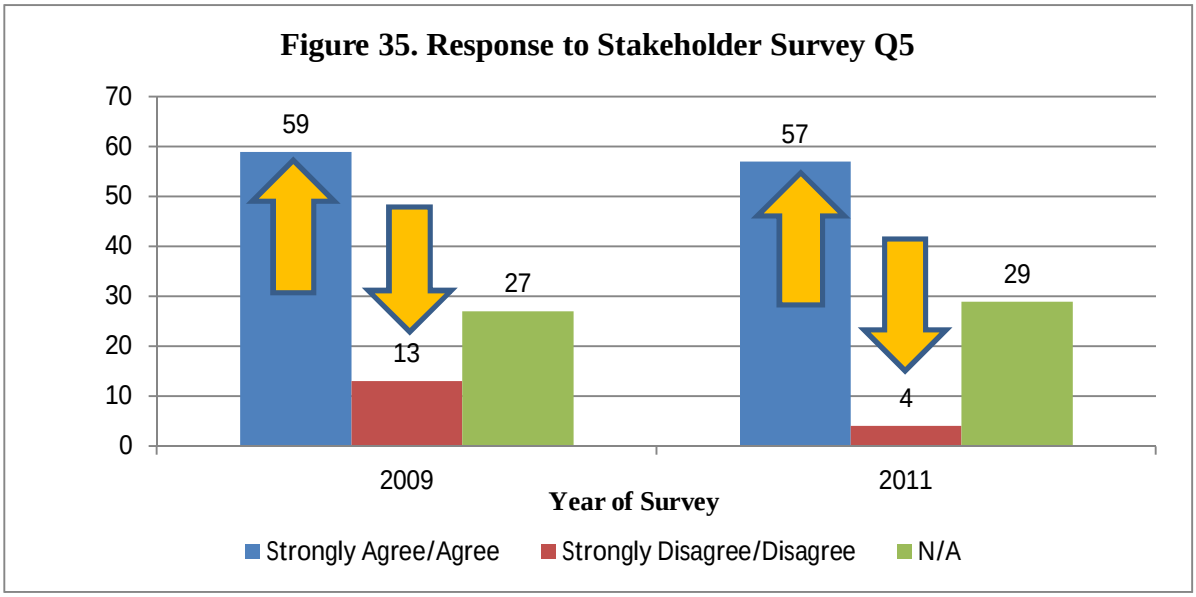
Year	2006	2007	2008	2009	2010	2011
Q1	100%	92%	91%	86%	92%	92%
n Q1	15	24	40	24	96	60
Q4	100%	96%	91%	93%	91%	82%
n Q4	15	26	44	28	105	65
Q5	100%	96%	91%	93%	93%	85%
n Q5	15	26	44	28	105	65

Q1. This is an effective way to promote the importance of soft-skills
Q4. I would recommend this game to others
Q5. I see the value of using this game in my workplace

Data are collected by participant survey, seeking input as to whether knowledge and skills gained is useful and applicable to the participant in her or his workplace. Participants responded to the survey statements identified as Q1, Q4, and Q5 described above. The data shown are the total Agree and Strongly Agree responses as a percentage of all the responses (i.e. the total number of responses to each statement for each survey is indicated by nQ1, nQ2, or nQ3 in the table below the chart in Figure 34. While the levels are relatively high and fluctuating at high levels, a slightly unfavorable down trend is obvious.

Effectiveness Measure PDE-4 relates to judging the effectiveness of professional development events for faculty through self-recognition that opportunities provided by FLATE have assisted

faculty in their work. Data have been collected through the biannual FLATE Stakeholder Survey and are displayed in Figure 35..



Q5. Curriculum Reform initiatives provided by FLATE have assisted me.

Figure 35. shows the total percentage of Strongly Agree and Agree responses in blue and is at about the same level in 2009 and 2011 as is the percentage of "Not Applicable" responses. The total percentage of Strongly Disagree and Disagree responses is in reddish brown and is favorably lower in 2011. Although there are only two data points, 2009 and 2011, the results indicate a favorable change in perception among stakeholders. Favorable direction is indicated by the "GOOD" arrow near each blue and each reddish brown bar. A more in depth summary of the Stakeholder Survey results are discussed below and can be found in Appendix B.

Section D. Additional Effectiveness Evaluation Results:

FLATE adopted the Sterling/Baldrige business model in 2006 to provide an evaluation framework for operating, as would any successful manufacturer. This evaluation model combines evaluation plan elements required by NSF with the quality-driven Florida Sterling/Baldrige process familiar to Florida manufacturers. Integrating Sterling/Baldrige quality components with FLATE's operations is vital to FLATE's success in serving customers,

partners, and other stakeholders. As a result, FLATE has created, nurtures, and maintains a team-based culture, driven by senior leaders, that engages and motivates all staff and volunteers, and focuses on serving customers and stakeholders.

FLATE seeks input and partnership with stakeholders to best develop and deliver products and services to the industry and academic environments. The Leadership Team drives success and sustainability through an integrated approach in setting the direction and goals of the organization while maintaining a culture of proactive leadership, collaboration, excellence, and an action orientation. Organizational goals and objectives are established and refined through annual evaluation planning. The Leadership Team and staff monitor progress against goals regularly, by using the results reported in this document and other data collected by FLATE. Actions are taken to assure goal accomplishment.

Actively listening to customers and stakeholders, and developing proactive approaches to meet their needs occurs in a number of ways. These include surveys, focus groups, input from the Industry Advisory Committee (IAC) and National Visiting Committee (NVC), twice-annual FLATE workshops at the Engineering Technology (ET) Forum, and interaction with customers at public exhibits and events. The FLATE website and contact information is in the public domain. Implicit in FLATE goals is Outreach requiring a proactive approach to follow up with customers and customer leads, and to close the customer and stakeholder relationship loop.

This evaluator has undertaken a biannual survey of FLATE stakeholders, now conducted in 2009 and 2011. In 2011, about 1265 valid survey response requests were emailed to FLATE stakeholders. While it was hoped for more participation, 194 responses were received, a response rate of about 15%. Of the responses received, 17% were K-12 Educators/Administrators, 53% Post-Secondary Educators/ Administrators, 20% Business and Industry representatives, 5% Workforce and Economic Development Professionals, 2% representing Florida Department of Education and Government, and 4% included Educational Suppliers and Vendors. Of the total, 57.7% of respondents were located in the State of Florida. Appendix B is a

summary of the results and some recommendations for improvement in meeting the needs of stakeholders.

The Leadership Team has taken previous recommendations for improvement seriously and has made good progress at improvement. The Team understands the use of the Sterling/Baldrige business model and has adapted the FLATE culture to integrate Sterling/Baldrige concepts. This quality approach with its resulting focus on excellence has lead FLATE and its leadership to be recognized in 2011 for excellence, as follows:

FLATE received STEMflorida, Inc.'s *"Best Practice Award for Excellence Integrating Needs of STEM-Enabled Programs into Engaging Curriculum and Educational Outreach Resources."* The award was presented on June 24, 2011 during the STEM Florida Think Tank in Orlando, and recognized FLATE's role in spearheading efforts to launch a national, industry-recognized, STEM-focused credential system that supports the educational and workforce needs of manufacturers throughout the state. FLATE was also named a finalist for the Industry Achievement Award for 2011 Community Supporter of the Year. In addition, FLATE received two Best Practice Awards for its ToothPick Factory and STEM at Work Puzzles from Florida Career Pathways Network "*for outstanding dedication and leadership conducted through [FLATE's] Best Practice Award Winning Programs in support of Career Pathways/Programs of Study Initiatives in the state of Florida*."

Self-Assessment Summary and Key Strength and Opportunity Themes

The biannual Sterling/Baldrige self-assessment was last completed in 2010 and is due again in 2012. This process included an assessment scoring by a certified Sterling evaluator. Scoring in 2010 shows improvement from 2008. Figure 36. depicts the FLATE scores, both overall and for each category comprising the whole. Although the Sterling scoring process is uniform it is not based on a linear scale. In addition, as the organization gets better at accomplishing its goals and mission, expectations for quality improvement also increase. Thus, the score always reflects the current performance and the maturity level of leadership and management systems.

Figure 36. FLATE Sterling Assessment Score								
	Overall Score	**Category 1**	**Category 2**	**Category 3**	**Category 4**	**Category 5**	**Category 6**	**Category 7**
		Leadership	**Strategic Planning**	**Customer Focus**	**Measurement, Analysis, & Knowledge Management**	**Workforce Focus**	**Operations Focus**	**Results**
2008		30%	40%	40%	25%	25%	30%	30%
Available Points	1000	140	100	100	100	100	100	360
Total Points	310	42	40	40	25	25	30	108
2010		40%	50%	40%	30%	30%	30%	30%
Available Points	1000	140	100	100	100	100	100	360
Total Points	362	56	50	40	30	30	30	126

To put scoring in context, "average" or typical organizations usually score in the 20-25% or 200-250 points range. Sterling Award winners are usually at 50% or 500 points and better. There are no perfect scoring organizations, as there are always progressively higher level opportunities and expectations for improvement. Overall 900 or higher scores are uncommon, but it is not unusual for Sterling Award winners to score in the 90% range in one or more individual criteria categories. The findings from the 2010 Sterling assessment follow.

FLATE leadership is dedicated to building a systematically managed organization focused on customers and stakeholders, and on mission sustainability. FLATE demonstrates effective approaches in various areas, many systematic and responsive to the basic requirements of the Sterling/Baldrige Criteria for Performance Excellence. Most approaches are appropriately deployed. A continuous improvement mindset is prevalent in the organizational culture. Improvement efforts focus on innovation and problem solving, and are generally forward looking. Evaluation and improvement efforts are more so than previously but not yet fully

systematic and process-based. There has been significant improvement in FLATE's use and dependence on performance measures to guide fact-based decision-making and process changes. Continued development of relevant comparative data and information is still needed to establish realistic goals for key performance measures.

III. Summary

FLATE has a central focus on organizational sustainability. The Leadership Team has a clear vision for the future, and systematically seeks opportunities that align with sustainability options. Continuous improvement is embedded in the culture of FLATE leadership and staff. This evaluation demonstrates the results, culture, and capacity to fulfill its mission and meet the needs of the National Science Foundation (NSF), its customers, and stakeholders. Performance results validate FLATE's ability to gain the confidence of its stakeholders. This confidence has been demonstrated in a number of ways, and corroborated by performance results in this report, such as ET program adoptions, college enrollments, and industry contributions. FLATE continues to develop options and strategies for sustaining its mission and functions.

Key Strength and Opportunities for improvement are noted. The following comments summarize progress to date of the last reported areas of opportunity for improvement and additional recommendations are made.

Previous Recommendations:

- Develop a means to build key processes, which incorporate evaluation and improvement into the process itself to facilitate continuous improvement activity.
  Progress: This is accomplished and ongoing. More effort is put into systematic review of key processes and initiatives. As new initiatives are developed the Leadership Team regularly considers how to evaluate effectiveness with a measure or set of measures beyond counting activities.

- Create a system for identifying key measures requiring comparatives, select appropriate

comparatives, and effectively use key comparisons to set goals and improve organizational performance.

Progress: There is progress in this area, as some comparison data are being collected, which should be continued. It is suggested that criteria and a procedure be developed to select the processes and areas of measurement requiring comparatives, and for identifying target comparative organizations. Comparison data needs should be established regarding relative performance in key areas.

- Build an approach to regularly review FLATE performance, set and prioritize improvement actions, and communicate the same to the staff and stakeholders. To facilitate compilation of data and systematic review of performance and Effectiveness Measures in a fashion that is simple to review and identify results not meeting goals.

  Progress: This is accomplished and ongoing and will not be repeated in the next annual evaluation report. FLATE Leadership and staff regularly review results to assess progress and to identify areas needing improvement.

- Where applicable, modify Effectiveness Measures to collect normalized rather than raw data. Normalized data yield better information when comparative data are obtained from organizations with similar processes.

  Progress: This is accomplished and ongoing and will not be repeated in the next annual evaluation report. When originating new measures the Leadership team regularly identifies a normalized view of the data to be collected.

- Investigate whether there is any correlation between inquiries and referrals from the *Florida Trend* NEXT advertorial to actual enrollment in a college and/or manufacturing related programs. Similarly seek correlations between web page hit data and effectiveness related to enrollment in manufacturing-related programs.

  Progress: The NEXT program will not be pursued beyond 2012 due to funding reductions at the state level and from industry supporters who with FLATE are engaging other means of outreach to high school students. However, the concept of correlations is important in pinpointing where resources applied have the greatest positive impact on performance. This

specific recommendation will be dropped in future reports, but other data correlations should be sought.

- Follow-up to determine whether data can be collected that indicates effectiveness of outreach and professional development efforts in the classroom. In other words, try to answer the question: Do FLATE activities and efforts influence teacher and student behavior in the classroom?

  Progress: Although there are some data regarding perceptions of the usefulness of professional development activities, the core of this recommendation has not been accomplished. More refinement in the data collected is needed to establish quantitative information that is actionable.

- Based on results of the Stakeholder Survey (2009), there is an opportunity to be more effective in the FLATE outreach campaign specifically from the perspective of the Business and Industry demographic group, but to make stakeholders generally more aware of FLATE, its services, and its impact on curriculum reform. As an example of what is needed, feedback from the stakeholder survey caused immediate action to improve the *Made in Florida* website.

  Progress: After the 2009 survey and again after the 2011 survey, FLATE stepped up outreach efforts to reach Academia and industry with emphasis in the densely populated South Florida region and several new outreach initiatives were launched. The MIF website has been upgraded to make network connections between industry and sources of technical employee prospects at the colleges, the contact list has been up-scaled, and more. Additionally, the Industry Advisory Council (IAC) and the National Visiting Committee have both been expanded in size and geographical representation. Regardless the extent of current outreach, the need for greater outreach is a perennial need. The latest Stakeholder Survey highlights this fact by revealing many stakeholders responding with the "Not Aware" response choice to survey statements. Additionally, the Industry Advisory Council (IAC) and the National Visiting Committee have both been expanded in size and geographical representation. Focus should continue on three aspects of outreach: outreach between FLATE and academia to increase awareness of FLATE's services and products; outreach between

FLATE and industry to increase awareness of the workforce resources and sources of technical employees for manufacturers; networking connections between industry and academia.

- Develop an approach for aggregating feedback and opportunities for improvement from the range of various sources. The approach should include prioritizing the opportunities and developing action plans to implement improvements.
  Progress: Processes and systems have been refined in implementing this recommendation. More improvement in this area is recommended and guidance will be provided at leadership meetings where specifics will be discussed to help FLATE develop appropriate feedback mechanisms.

2011 Recommendations:

- Data reported indicate that enrollments and completions at the secondary level and in the PSAV/technical schools are trending unfavorably. As these are pipelines/pathways to the AS/AAS ET Degree Program, problem solving should be applied, to determine root causes and develop an action plan and potential solutions to reverse the identified trends.
  Progress: The Post-Secondary Adult Vocational (PSAV) pathway to the ET degree program does not represent a significant source of ET degree enrollees. FLATE should shift attention and effort from PSAV programs to more direct recruiting of academy and high school student populations, building on interest and awareness, to increase enrollment and completions in the A.S. ET degree and related programs. Data still indicate that enrollments and completions at the secondary level are trending unfavorably. In the past year, efforts have been made to improve outreach to high schools through the regional manufacturers associations (RMA). The RMAs have been advised and provided materials for conducting outreach and building awareness among local populations of students and families to gain interest in education for technical careers.

- Assist Partner Community/State Colleges and Technical schools in developing standardized

processes for timely action on *NEXT* advertorial-generated inquiries.
Progress: This specific recommendation will be dropped in future reports, as the NEXT program is discontinued.

- The CARCAM comparison needs refinement to establish comparison points relative to performance of each of the programs, not simply process comparisons. For instance, recognition of the similarities and difference between programs is necessary but not sufficient to make a determination whether one performs better than the other. Once performance differences are distinguished, then process similarities and differences can be analyzed to determine whether process changes are necessary to make improvement in performance.
  Progress: This is still an active recommendation and is merged into the recommendation cited earlier regarding comparative data.

2012 Recommendations:

- Collect data regarding college enrollments and growth overall to put context on the growth of enrollment in the ET and related programs, including overall growth at the comparative organization.

- The next three recommendations, while outreach-related and discussed indirectly in the earlier outreach recommendation, are the key recommendations coming from the 2011 Stakeholder Survey:

  - Data should be collected and reported regarding industry perceptions pre- and post-student tour events.

  - Look into collecting data regarding the accomplishment of technical credentials and certifications in comparative programs.

- Research whether past years data are available for those high school programs that were in existence but for which data were not collected (until 2011) and are newly added into this evaluation report.

- There is demand for more and more frequent and more accessible professional development opportunities for educators (e.g. ET- and STEM-related workshops, Summer Institute).

- There continues to be a need for more outreach (with emphasis in South Florida) especially related to promoting exchange of ideas and greater cooperation between industry, academia, students, and collaboration with other organizations with similar missions. While there has been some effort in this area already, such as the Outreach campaign materials distributed to RMAs, more is needed.

- Maintain a focus on manufacturers, and technical education, to help them understand what resources are available to them and what benefits can be derived by understanding and cooperation with FLATE efforts to build the pipeline for and enhance the manufacturing workforce.

Appendices

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2006-2011 Florida Engineering Technology and Related Program Enrollment and Completion

FLATE, a National Science Foundation Regional Center of excellence, annually compiles enrollment and completion data for the Engineering Technology (ET) and related degree and college credit certificate (CCC) programs for Florida colleges, and for related programs at the PSAV and secondary level. These data, provided by the Florida Department of Education, are reliable, but do not include enrollments for undeclared majors. College Registrar reporting/cut dates also result in reported enrollment discrepancies. Minor anomalies may occur as older program titles are collapsed and new program titles are added. This review contains six sections and an appendix with individual ET adopting college performance. This report was compiled 12/15/2011 for the 2010-11 FLDOE report year.

I. Total Engineering Technology and Related Technology Program Enrollment: AA/AAS and Certificates; BS Degrees, Selected Demographic Profile

II. Engineering Technology and Related Technology College Degree Enrollment and Completion by Program

III. Engineering Technology and Related Technology College Credit Certificate Enrollment & Completion by Program

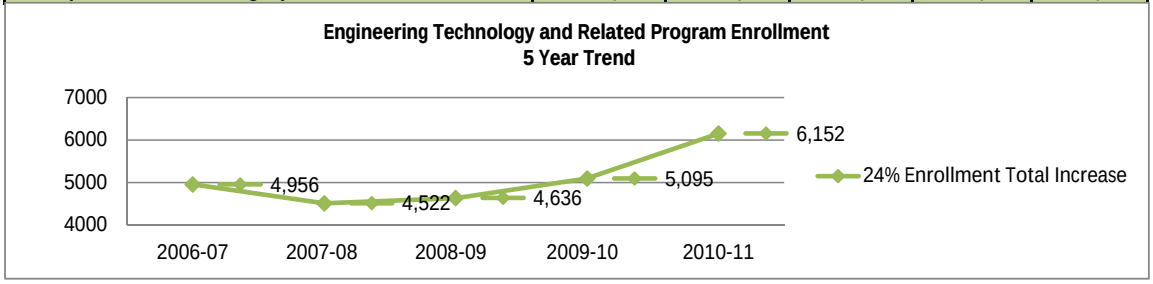
IV. Secondary Level Technology Enrollment by Program

V. Secondary Level Technology Program Demographics including Internships and Completion

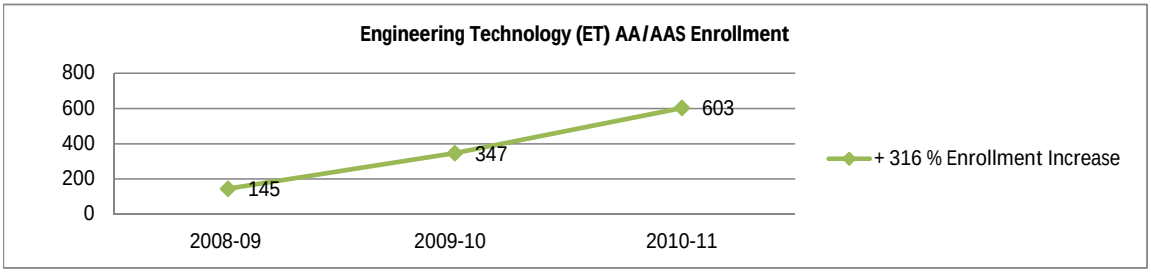
VI. Post-Secondary Adult Vocational (PSAV) Enrollments, OCP, and Completions

Appendix: 5-Year Engineering Technology and related Technology Program Enrollment Trend by College with breakout detail for Colleges Adopting ET Degree and Certificate Programs including Adoption Year

I. Total Engineering Technology and Related Technology Program Enrollment: AA/AAS and Certificates 5 Year Trend (for 25 Florida Colleges)	2006-07	2007-08	2008-09	2009-10	2010-11
	4,956	4,522	4,636	5,095	6,152



Enginnering Technology AA/AAS program Breakout	2008-09	2009-10	2010-11	%Change
Engineering Technology (ET) AA/AAS Enrollment	145	347	603	+316%
Number of Colleges Adopting the Program	7	9	10	+43%



Total ET Bachelor Degree Program Enrollment (Currently Offered at 2 Florida Colleges):	2010-11
Engineering Technology & Electronics Engineering Technology (new baseline measure)	204

Selected Demographic Profile of Enrollment for Total ET and Related College Programs *					
ET and Related College Degree and Certificate Programs				2009-10	2010-11
Technology Program Total Enrollment				5,095	6,152
Male				3,849	4,802
Female				1,228	1,323
Unreported Gender				18	27
% Female of Total Enrollment				24%	22%
% White Students				60%	55%
% Minority Students				40%	45%

*New measurement and tracking by FLATE beginning 2009 -10 report year.

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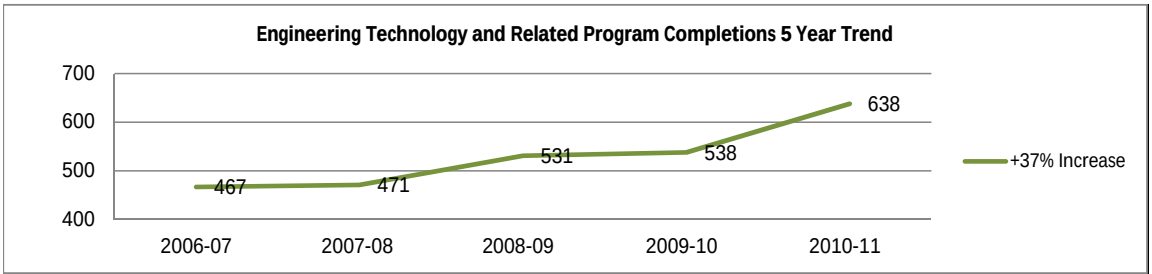
II. Engineering Technology and Related Technology Enrollment by Program ( ) Indicates Number of Colleges Offering the A.S./A.A.S. Degree in 2010-11 Academic Year					
A.S./A.A.S. Degree Programs	**2006-07**	**2007-08**	**2008-09**	**2009-10**	**2010-11**
(8) Engineering Technology (ET) Degree Enrollment			**145**	**347**	**603**
FLDOE does not provide enrollment by specialization. (n) represents colleges offering these A.S/A.A.S. Degrees for the report year.					
(1) Aerospace Technology	80	90	89	86	67
(5) Biomedical Engineering Technology	322	261	239	365	466
(2) Chemical Technology	192	206	342	547	646
(3) Computer Integrated Manufacturing	132	96	73	59	58
(17) Drafting & Design Technology	1,618	1,482	1,286	1,207	1,148
(3) Electrical Distribution Technology*					41
(3) Electrical Power Technology *					335
(15) Electronics Engineering Technology	1,406	1,053	1,152	1,271	1,348
(15) Industrial Management Technology	703	690	694	761	805
(4) Manufacturing Technology	99	70	62	33	33
(1) Simulation and Robotics Technology		50	48	38	29
(2) Supply Chain Management*					9
Total Degree Enrollment /ET and Related	**4,552**	**3,998**	**4,130**	**4,714**	**5,588**
* Added to 2010-11 Report					

Engineering Technology and Related Technology College Degree Completion by Program					
A.S./A.A.S. Degree Completion	**2006-07**	**2007-08**	**2008-09**	**2009-10**	**2010-11**
Aerospace Technology	10	6	15	11	18
Biomedical Engineering Technology	28	24	23	30	35
Chemical Technology	9	17	13	19	34
Computer Integrated Manufacturing	28	7	8	6	5
Drafting & Design Technology	107	110	121	124	132
Electrical Distribution Technology*					1
Electrical Power Technology *					45
Electronics Engineering Technology	86	65	117	93	123
Engineering Technology			**7**	**14**	**37**
Industrial Management Technology	192	239	222	237	199
Manufacturing Technology	7	1	4	3	5
Simulation Technology		2	1	1	4
Total College Completion	**467**	**471**	**531**	**538**	**638**



III. Engineering Technology and Related Technology Certificate Enrollment & Completion by Program ( ) Indicates the number of schools currently offering the certificate					
ET Program Certificate Enrollment	**2006-07**	**2007-08**	**2008-09**	**2009-10**	**2010-11**
(1) CCC - Alternative Energy Systems Specialist (new program)					10
(1) CCC - Applied Technology Specialist		46	36	13	12
(1) CCC - Automation				2	5
(2) CCC - CNC Machinist		1	2	5	12

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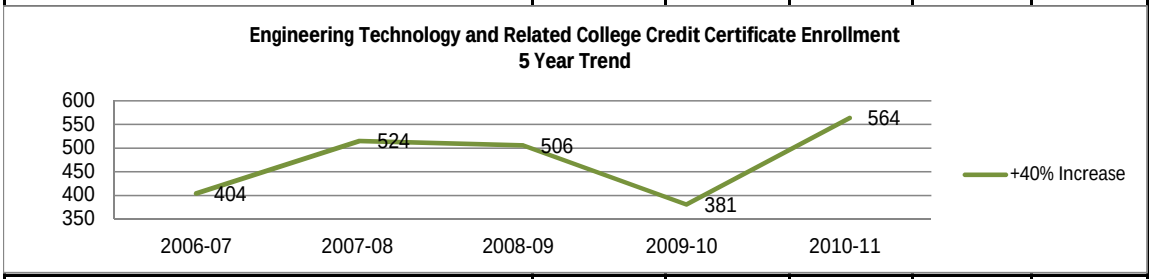
ET Program Certificate Enrollment	2006-07	2007-08	2008-09	2009-10	2010-11
(1) CCC - Composite Fabrication & Testing (new program)					1
(1) CCC - Computerized Woodworking			1	0	0
(5) CCC - Engineering Technology Support Specialist		9	22	20	16
(1) CCC - Lean Manufacturing				20	1
(2) CCC - Lean Six Sigma Green Belt		25	16	12	21
(1) CCC - Robotics and Simulation Technology (new program)					1
(1) CCC - Six Sigma Black Belt		22	13	5	11
Total ET Program Certificate Enrollment		**103**	**90**	**77**	**90**
Related Technology Program Certificate Enrollment by Program					
(2) CCC - Alternative Energy Engineering Technology (new program)					7
(13) CCC - AutoCAD Foundations	395	337	328	245	269
(2) CCC - Chemical Laboratory Specialist	9	7	6	15	10
(1) CCC - Electrical Distribution, Advanced					7
(1) CCC - Electrical Distribution, Basic					8
(3) CCC - Electronics Technician, Basic		49	55	28	129
(3) CCC - Electronics Technician		15	21	13	26
(1) CCC - Laser and Photonics Technician		13	6	3	8
(2) CCC - Logistics & Transportation Specialist (new program)					9
(1) CCC - Scientific Workplace Prep					1
Related Technology Program Certificate Enrollment	**404**	**421**	**416**	**304**	**467**
Total ET & Related Certificate Enrollment	**404**	**524**	**506**	**381**	**564**



ET Certificate Completion by Program	2006-07	2007-08	2008-09	2009-10	2010-11
CCC - Alternative Energy Systems Specialist (new program)					1
CCC - Applied Technology Specialist		25	21	22	2
CCC - Automation				2	5
CCC - CNC Machinist		1	2	7	11
CCC - Composite Fabrication & Testing (new program)					13
CCC - Computerized Woodworking				1	2
CCC - Electronics Aide				9	1
CCC - Engineering Technology Support Specialist		5	36	36	35
CCC - Lean Manufacturing				20	0
CCC - Lean Six Sigma Green Belt		26	33	24	33
CCC - Six Sigma Black Belt		33	27	22	25
Total ET Certificate Completion by Program		**90**	**119**	**143**	**128**
Related Technology Certificate Completion by Program					
CCC - AutoCAD Foundations				161	167
CCC - Basic Electronics Technician		92	52	24	111
CCC - Electronics Technician			26	8	12
CCC - Chemical Laboratory Specialist	5	2	2	6	4

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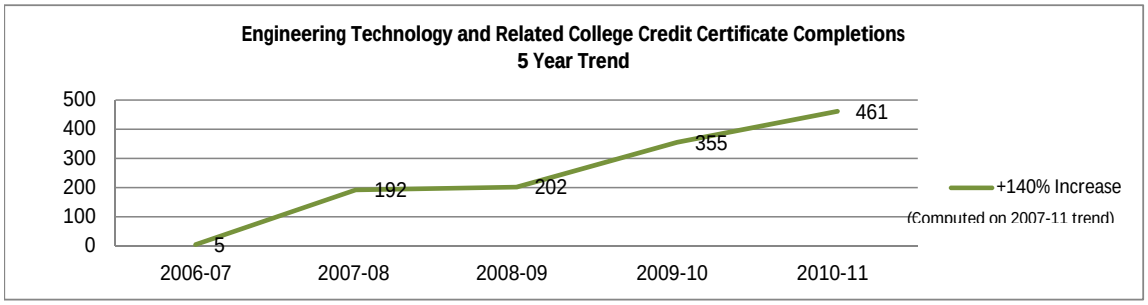
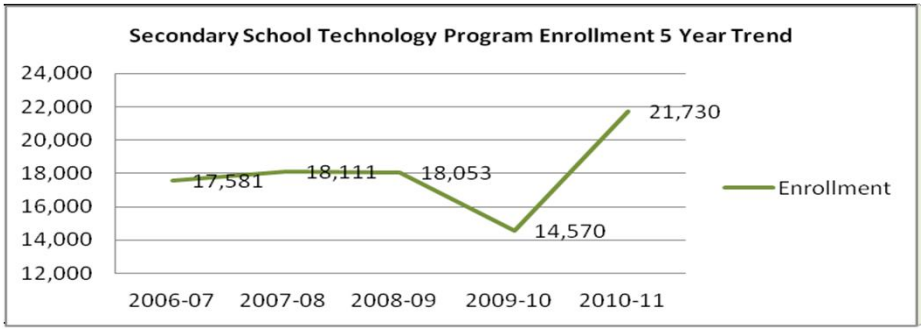
Related Technology Completion by Prog.	2006-07	2007-08	2008-09	2009-10	2010-11
CCC - Electrical Distribution, Basic					13
CCC - Laser And Photonics Technician		8	3	2	8
CCC - Logistics & Transportation Specialist (new program)					5
CCC - Scientific Workplance Prep				11	13
Related Technology Program Certificate Enrollment	**5**	**102**	**83**	**212**	**333**
Total Certificate Completion/ET & Related	**5**	**192**	**202**	**355**	**461**



IV. Secondary Level Technology Enrollment by Program*	2006-07	2007-08	2008-09	2009-10	2010-11
Number of Programs Offered	**521**	**548**	**541**	**380**	**612**
Total Enrollment	**17,581**	**18,111**	**18,053**	**14,570**	**21,730**



*Not all programs reported and tracked in 2010-2011 were previously reported: refer to following detailed program list. Enrollment without the new additions = 13,209

Note: New manufacturing related technology programs were added to the report for 2010-11 to provide a more comprehensive baseline and add perspective to the advanced manufacturing technology pipeline.

Secondary Enrollment by Technology Program					
Program Title	**2006-07**	**2007-08**	**2008-09**	**2009-10**	**2010-11**
*Applied Welding (new to report)					1,157
Automation & Production Technology (New program adopted by FLDOE in 2010)				37	26
*Electronic System Assembly (new to report)					5
Electronics Technology	692	675	626	603	635
Engineering Assisting	315	347	291	351	283
Engineering Technology	6,139	8,134	8,522	6,853	6,438
Industrial Biotechnology			229	285	201
Industrial Machinery Maintenance	35	204	164	**22	228
Machining (new to report)					175
*Pathways to Engineering (new to report)					7,362
Materials and Processes Technology	5,576	4,661	4,602	3,942	3,030
Production Technology	2,093	1,868	1,717	1,584	1,440
*Precision Metal Fabrication (new to report)					1
*Sheet Metal Fabrication Technology (new to report)					1
Solar Energy Technology (new program adopted by FLDOE in 2011)					78
Technology Systems	2,731	2,222	1,902	915	670
Total Enrollment by Program	**17,581**	**18,111**	**18,053**	**14,592**	**21,730**

** 22 reported enrollment for 2009-10 confirmed

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V. Secondary Technology Program Demographics					
Secondary Technology Programs	**2006-07**	**2007-08**	**2008-09**	**2009-10**	**2010-11**
Technology Program Total Enrollment	17,581	18,111	18,053	14,592	21,730
Male	14,625	15,291	15,050	12,183	18,241
Female	2,956	2,820	3,003	2,409	3,489
% Female of Total Enrollment	17%	16%	17%	17%	16%
% White Students	53%	53%	51%	49%	50%
% Combined Other Minority Students	47%	47%	49%	51%	50%
Technology Program Total Graduates	3,079	3,114	3,042	2,732	3,626
% Technology Program Graduates	18%	17%	17%	19%	17%
Male Graduates	2,515	2,530	2,472	2,231	3,029
Female Graduates	564	584	570	501	597
% Female of Total Graduates	18%	19%	19%	18%	17%
% White Students	70%	54%	53%	48%	50%
% Combined Minority Students	30%	46%	47%	52%	50%
Total Internships	1,951	288	229	262	250
Males Placed in Internships	1,478	238	174	182	158
Females Placed in Internships	473	50	55	80	92
% Females Placed in Internships	24%	17%	24%	31%	37%

VI. Post-Secondary Adult Vocational (PSAV) Enrollments, OCP, and Completions					
PSAV FLDOE Report Categories	**2006-07**	**2007-08**	**2008-09**	**2009-10**	**2010-11**
Enrollment	346	425	371	359	*1577
Occupational Completion Point (OCP) Earners	290	414	333	340	2,279
Full Program Completer	37	34	33	43	522
Number of Programs	18	15	5	5	9
Number of Participating Institutions	11	8	9	12	30

*Not all programs reported and tracked in 2010-2011 were previously reported: refer to following detailed program list.

Applied Welding Technologies (new to report)					1,175
Automation & Production Technology (New program adopted by FLDOE in 2010)					6
Electromechanical Technology					92
Electronic System Assembly (New to Report)					1
Industrial Machinery Maintenance					50
Industrial Technology					8
Machining					148
Solar Energy Technology (New to Report)					66
Solar Thermal Design, Installation, & Maintenance (New to Report)					31
Total PSAV Manufacturing Related Technology Program Enrollment					**1,577**

Enrollments new to the report = 1,273; Enrollment without the new additions = 304

Note:

As reported in 2010, FLDOE does not provide long-term tracking and cross-referencing with the FETPIP employment records at this time, although a startup for this ability was mentioned on the FLDOE website as planned for start-up in 2012.

FLDOE remains unable to provide MSSC cross-referencing.

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Appendix: 5-Year Technology related Enrollment Trend* by College with breakout for Colleges Adopting ET Degree and Certificate Programs with Adoption Year

ET and Related Technology A.S./A.A.S. and Certificate Enrollment by College

Source: FL DOE Data Report

Highlight indicates adoption of ET Degree	2006-07	2007-08	2008-09	2009-10	2010-11
Brevard Community College	465	584	750	967	1082
Broward College	252	138	144	176	212
College of Central Florida	94	95	109	101	109
Chipola College	11	12	8	0	0
Daytona State College	228	313	257	203	225
Edison State College	249	294	265	247	222
Florida Gateway College				2	23
Florida State College at Jacksonville	380	311	256	405	430
Gulf Coast State College	127	107	113	113	128
Hillsborough Community College	182	216	257	288	337
Indian River State College	219	239	326	330	370
Lake Sumter Community College (new to this report)					40
Miami Dade College	505	273	256	269	485
Northwest Florida State College	464	365	361	332	313
Palm Beach State College	207	81	63	70	199
Pasco-Hernando Community College	108	110	85	87	80
Pensacola State College	192	172	167	169	202
Polk State College*	1			14	82
Santa Fe College	73	89	100	157	205
Seminole State College of Florida	108	103	108	84	78
South Florida Community College	26	27	29	43	54
St. Johns River State College	33	32	46	66	51
St. Petersburg College	252	258	225	205	259
State College of Florida Manatee-Sarasota	99	116	116	136	138
Tallahassee Community College	267	145	106	102	135
Valencia Community College	414	442	489	529	693
Total Enrollment for all Institutions	**4,956**	**4,522**	**4,636**	**5,095**	**6,152**

* Reported data anomaly confirmed with FLDOE; (1) in 2006-07 does not reflect actual enrollment

Breakout for Colleges Adopting the Engineering Technology Degree Program

Note: Breakdown between ET AS/AAS degree and certificates and technology related AS/AAS degree and certificates was started in 2009-10 due to the growth of the ET program. Some programs are too new to display FLDOE trend data.

College Name and Enrollment Type	2006-07	2007-08	2008-09	2009-10	2010-11
Brevard Community College (BCC) Adopted 2008					
ET AS/AAS Degree Enrollment				138	199
ET Certificate Enrollment				16	25
Related AS/AAS Degree Enrollment				784	841
Related Certificate Enrollment				29	17
Total	465	584	750	967	1,082
College of Central Florida (CCF) Adopted 2008					
ET AS/AAS Degree Enrollment				37	42
ET Certificate Enrollment				2	2
Related AS/AAS Degree Enrollment				62	65
Related Certificate Enrollment					
Total	94	95	109	101	109
Florida State College at Jax (FSCJ) Adopted 2009					
ET AS/AAS Degree Enrollment				47	70
ET Certificate Enrollment				3	16
Related AS/AAS Degree Enrollment				340	324
Related Certificate Enrollment				15	20
Total	380	311	256	405	430

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College Name and Enrollment Type	2006-07	2007-08	2008-09	2009-10	2010-11
Florida Gateway College (FGC) Adopted 2009					
ET AS/AAS Degree Enrollment				2	10
ET Certificate Enrollment					1
Related AS/AAS Degree Enrollment					6
Related Certificate Enrollment					6
Total				2	23
Hillsborough Community College (HCC) Adopted 2008					
ET AS/AAS Degree Enrollment				6	14
ET Certificate Enrollment *				20	2
Related AS/AAS Degree Enrollment				218	259
Related Certificate Enrollment				44	62
Total	182	216	257	288	337
*90% loss of ET certificate enrollment is due to completion by CASS student cohort.					
Pensacola State College (PSC) Adopted 2008					
ET AS/AAS Degree Enrollment					
ET Certificate Enrollment				5	7
Related AS/AAS Degree Enrollment				157	192
Related Certificate Enrollment				7	3
Total				169	202
Polk State College (PSC) Adopted 2009					
ET AS/AAS Degree Enrollment				5	42
ET Certificate Enrollment					
Related AS/AAS Degree Enrollment				9	40
Related Certificate Enrollment					
Total				14	82
St. Petersburg College (SPC) Adopted 2008					
ET AS/AAS Degree Enrollment				90	128
ET Certificate Enrollment				31	36
Related AS/AAS Degree Enrollment				77	87
Related Certificate Enrollment				7	8
Total	252	258	225	205	259
State College of Florida Manatee-Sarasota (SCF) (Adopted 2009)					
ET AS/AAS Degree Enrollment					98
ET Certificate Enrollment					
Related AS/AAS Degree Enrollment				136	40
Related Certificate Enrollment					
Total	99	116	116	136	138
Tallahassee Community College (TCC) (Adopted 2011)					
ET AS/AAS Degree Enrollment *					
ET Certificate Enrollment					
Related AS/AAS Degree Enrollment					135
Related Certificate Enrollment					
Total					135

*No ET data available due to adoption after the FLDOE report year data run.

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