

The intent of this research is to discover if the current structure of the Haile Middle School engineering academy is increasing student performance outcomes regarding career readiness and aligning with standards and guidelines for middle school career academies. A stride to improve engineering education academies in Manatee County and also in conjunction with Florida House Bill 1255, in 2012 Haile Middle School established a dual enrollment engineering academy. This academy is the first middle school engineering academy established in the District of Manatee County. To date there has been no research or tracking of the student body enrolled in the engineering academy.

President Barack Obama stated in a speech at the National Academy of Sciences in 2009, for educators to “think about new and creative ways to engage young people in science and engineering, like science festivals, robotics competitions, and fairs that encourage young people to create, build, and invent—to be makers of things, not just consumers of things”(Davis, Yeary,Sluss,2012). With the current downturn of the job market, assurance is expected that students are prepared to enter the labor force highly skilled and highly qualified (Wilcox, 2006). However, in 2005 the gates foundation reported 81% of students who dropped out said “more real world learning may have influenced them to stay in school” (Bridgeland, 2005). Research has acknowledged that Career and Technical Education is momentous to a young person’s education and can add value to the probability of their success.

During this project, a survey research method was utilized to better understand the current status of the academy. Activities developed to complete research will involve implementing the school districts Quick Query system to research student data such as reading levels, ethnic background, state testing scores, age, and gender. This research will deliver information needed in discovering the population of students the schools engineering program is reaching. An annual self assessment of the academy will be evaluated by a district administrator to ensure the teaching and learning of the academy remains engaging and of high quality while aligned with academy standards of practice. Current high school teachers will also be surveyed to better understand expectations of current students and middle school academies. Finally a pre certification exam will be administered to academy students to gauge a level of knowledge and preparedness regarding industry certification.

Focus Questions:

1. Is the academy promoting retention into high school programs?
2. Is the curriculum rigorous and relevant?
3. What actions are required to improve?

One hundred percent of the teachers surveyed felt middle school academy programs will promote the success of high school academies. Indicators from survey results of students did reveal that 87.5% do plan on enrolling in 4 years of engineering at the high school level, with 45.8% planning to choose engineering as a career. Pre-test results showed most students are not prepared to attempt industry certification during the first semester of their 8th grade year. Data suggest that a conclusion can be drawn that the academy is successfully providing students with

career focused learning, and encouraging the pursuit of careers in engineering. Based on results students understand the value of career focused learning in the academy environment.

Immediate action required from outcomes of the district evaluation involves the implementation of a proficient advisory committee which will create a stronger connection between school, community and the k-12 engineering structure. The selected committee could develop an action plan for learning to begin when students enter in kindergarten, and end with the knowledge and skills that will be needed at graduation to support the local workforce. This action plan will have to consider the impact of adopting National Common Core Standards by all districts.

Resulting of this research study revealed a great need to reestablish a strong advisory group for the Manatee County Engineering programs and also pay closer attention to opportunities within the community for non college bound students. This group addresses the importance to bond the Manatee County Engineering, Manufacturing and Technology Education Programs with the local workforce and Workforce needs. The group consists of secondary educators, post secondary educators, administrators and local business members. The Chamber of Commerce was engaged along with the local manufactures association. The coming together of these critical groups has begun to increase awareness of highly skilled students for the local workforce and also encouraged a better focus for schools to place on non college bound students. A virtual advisory group was also created through recommendation of the partners. The community wanted a quick and easy way to access information about the programs. The group was created on LinkedIn and has begun to see followers around the nation. Further action will conclude to survey the effectiveness of a virtual advisory group.

<http://www.linkedin.com/groups/Engineering-Technology-Education-Advisory-Group-4943564/about>