

Engineering implemented in k-12 classroom

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Running head: EDUCATION INTERVIEW Engineering Implemented in K-12 rooms School Engineering Implemented in K-12 rooms College , Maya Shample, works in the engineering department. She has been working on a project that combines engineering and education. In an interview, Shample discussed what she learned from the project and how it benefited students as well as the local community. Shample, along with many of her current engineering graduate students, have worked with other schools in the Tampa area to combine what is going on in her engineering classroom and has developed this project as an outreach project in order to educate other students in kindergarten through twelfth grade also in the nearby area about engineering projects. Shample said that it takes many synergies to combine the graduate students, the younger students and the community but she took a project and made it work. She then saw that there was challenges and problems within the community and thought it would be an interesting way to expose younger students to different experiences versus traditional education. It initially began when a community betterment project was designed and was running out of funding that was being conducted by a professor in architecture, Trent Green, to work on the design of a storm water project. That was when she realized that she could some how integrate her engineering team of students to help work in conjunction and she was able to write more grants from her department to achieve this goal to better the nearby community. In this she saw an opportunity to combine the project with teaming up with students and teachers in K-12 schools to get the students more involved in the project and to increase interest in engineering. Maya's main role in this project is to be the supervising professor overseeing the graduate students in their additional projects. She

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also helps to work with the professor of architecture that originally designed the storm water project and arranges to team up with other teachers in the K-12 schools, a school in particular that is a magnet school focused on science and technology. She also is one of the primary grant and proposal writers to obtain funding and encourage teachers to want to help participate in the project in conglomeration with her engineering students. The basis of the project is to incorporate the research that her engineering students are working on and encourage the younger students to help collect data. It helps to not only get them more interested in engineering but to see how science and data collection can be used in engineering in order to solve a problem within the community. Some of the teachers even approached her to find a project that could be integrated into their curriculum. The curriculum for this project combining education and engineering was not necessarily already thought out nor was curriculum already in use. In fact, working with the students on at least a weekly basis helped her develop curriculum for her students as well as the K-12 students. The younger kids were able to use engineering techniques and integrate them in real life community situations through hands-on research and development. The overall goal of her project was to increase awareness about the environment and to integrate curriculum so students would be working on a hands-on project but were also bettering the community as well as educating community members through their work on the storm water project. Her engineering students and her throughout the entire project built and developed curriculum to use with the young students so they could additionally get the community involved and encourage them to take part. Many parents, seeing the excitement their young students were having in a hands-on and applied project, became more

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aware of the issues in their community that required attention and made an impact on the environment which served a purpose to the entire community as word about the project spread and others became aware of the issue at hand as well to see that this outreach project and the research that even young students could do could make an impact on the engineering problems in their local community area. When asking Shample to look back to see what she accomplished through this project, she said that it she was glad that they were able to establish a really strong partnership with the local community including the school system. They also changed and influenced their curriculum in the K-12 classrooms. This added to the progression of interest in all grade levels from kindergarten to college level to recognize issues in the local community and it challenged them to take part by encouraging interaction. She added that the young students were excited to take part and were excited about what they had done to contribute to the betterment engineering problem and they continued to develop their interest in engineering at a younger age. This program was designed to not only be an outreach program but to also help look for solutions in environmental situations that they could be fixed and would not be a huge expense to the city to bring in professionals to conduct research and data collection that they themselves could do. The project initially began when one student came in and went through the engineering program and decided she wanted to expose others in the community to some of the environmental issues and things others could do to help. Not only did the younger students gain knowledge in this area, but engineering graduate students also benefited. The graduate students learned how to integrate the engineering information and educate others. With Shample's primary role in leading the curriculum

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that needed to be developed with other teachers who had little background in engineering, she found it rewarding to help familiarize others with projects and that they could help. She said that it was very complicated and most of the curriculum was built as they went along each day but it solved problems in the community in a less expensive way. She said next semester when working on the project, a goal would be to have it much organized. Works Cited Shample, M. (2011, November 26) Personal interview.