

Delaware Tech Redesign Report

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Overview The math department at Delaware Tech has embarked upon a course redesign project, implementing the project this past year. Both the college and faculty should be commended for their teamwork and commitment to improving the learning process for students, turning developmental math into a ramp to success rather than a stumbling block. While the results so far have not been astonishing, the seeds for success have been sown. Through an atmosphere of continuous improvement, the college should be able to achieve their goals. This report is based on my visit in June 2013, when I had the opportunity to visit the Del Tech campuses, visiting with faculty, administration and students, while touring the facilities. It is also based on my review of the courses and online resources for students which have been produced by the Del Tech faculty.

Facilities While the facilities vary between campuses, they appear to be adequate and in some cases extremely nice. The administration should be commended on their support for the program, including the financial commitment necessary to construct the new facilities. Every effort should be made to ensure a positive atmosphere in the lab, including positive signage to highlight student success stories.

Faculty Buy-in During my visit, it was clear that there is a decent level of faculty buy-in. However, it is also clear that the faculty buy-in is not 100%. This is something that must be addressed as the project moves forward and hopefully will build as the project progresses. Faculty buy-in is important and lack of buy-in can stand in the way of progress. While it was hard to determine if this was a problem during my visit, it is definitely something to keep an eye on. However, it was clear that a number of faculty have bought into the program and are working hard on the program.

Courses and Rules I have examined the courses and the syllabi, and I believe that the program is on the right track but needs some tweaking. The best practices of course redesign are being incorporated, and the math faculty are clearly engaged in examining the details of the program and their impact on student success. In course redesign, the devil is often in the details, and getting these details just right is a big part of the project. With a spirit of continuous improvement and by keeping a constant eye on data, the faculty will ultimately get the details correct. Constant examination of the curriculum for quality and reasonableness combined with a willingness to try new things and experiment with new ideas makes for a successful redesign project. I've seen both of these in action at Delaware Tech. I've also seen the attention to detail in tracking students that it takes for a program to be successful.

However, I have some concerns about the curriculum after both examining the courses and visiting with faculty. Here are the main concerns that I have.

1. There is considerable overlap between courses. Math 015 has 30% overlap in the course.
2. There is too much material in MATH 015. Several faculty commented on this, and I agree.
3. There is no time for testing built into the course schedule, yet there are four exams. In a traditional setting, testing would take up class time. When adopting mastery learning, time for testing and some amount of flexibility are both needed and should be built into the schedule.
4. The quizzes are potential stumbling blocks, as students can be held up between quiz attempts. There should be a point at which they see an instructor, but the purpose of the quizzes is to provide weekly checkpoints. I recommend personalized homework on the second attempt for tests, but I do not recommend this for quizzes. Also, homework should not be set at 100%.
5. I recommend that courses in a 16 week semester have 14 or 15 weeks of work built into the schedule. I also recommend that one week be built into the schedule for each test. Otherwise students will get overwhelmed and may very well disappear. The schedule must build in some flexibility for struggling students, especially when mastery learning is being used.

It should be noted that a number of your resources are outstanding. The student success video is impressive, as is the integration of lab attendance into your student information system. It was obvious that a tremendous amount of work has gone into the program. Those who have done the work should be very proud of their efforts and they should be congratulated on a job well done. The fact that some tweaking is needed should not be viewed in a negative manner – rather this is simply a part of the process of continuous improvement, which is what course redesign is all about.

Data The next biggest challenge for the math faculty at Delaware Tech is to pay close attention to data, which will tell where the students succeed and where they struggle. Often there are one or two points where students simply give up – they literally disappear. Once these points have been identified, then the question becomes what to do. A variety of strategies may be employed, including extra lab time, student help sessions, and extra resources, all with an eye towards getting the student to keep going and not simply give up. Also, the curriculum must always be examined to ensure it is reasonable.

Comparison Data When gauging the effectiveness of a program it is important that data be evaluated correctly. In the short term, the success rates of the program as well as the success rates at the next level must both be taken into consideration. I pointed this out in an article I wrote for the AACC, which I

can provide you a copy of if you wish. Taken in isolation, either of these statistics can provide a misleading picture. Only by examining both of these can you get an accurate picture of the true effectiveness of your developmental math program. In the long term, you need to examine other data such as graduation rates and even achievement gaps. However, these cannot be looked at in the short term – but only after a number of years have passed. Ultimately, long term data on the traditional system should be collected and shared in order to build a consensus on all campuses of the need for change. Once the administration and faculty are convinced of the need for change and improvement, then it is important to resolve that you will not return to a broken system, but rather commit to improvement and not give up until you achieve the improvement you seek. However, it is very important that a complete set of data (program success, next course success, graduation rates, retention rates, achievement gaps) be gathered from the traditional system and shared with both faculty and administration. This data is an important reminder when your program struggles to achieve improvement. It is also important to be open with all of the data in order to build an atmosphere of trust and teamwork, which is vital to the long term success of the project.

The Voice of the Student Another way to gather valuable data is to conduct student focus groups. At these meetings 5 – 10 students should be gathered together and asked their opinions about various aspects of the program. Listening to the voice of the ordinary student is a good way to gather suggestions for improvement. It should be noted that complaints like “I have to do all the homework” should be ignored, while any negative remarks about the math lab atmosphere should be taken very seriously. Listening to the student voice in course redesign is a good way to build good will with the student body, and focus groups are an excellent way to accomplish this. I recommend you conduct a few of these next year in order to gain further insight as you tweak the program.

Summary The developmental math redesign project at Delaware Tech is in its beginning stage. What is needed at this point, to be honest, is time and patience. The University of Alabama did not see improvement until the third year, and this is not uncommon in course redesign. When you are talking about changing the student culture and the way may is learned, it takes time. By continuing to build the program through attention to detail, with teamwork and continuous improvement guiding the way, I have no doubt that Delaware Tech will ultimately accomplish their goals of increasing student learning and success in developmental math. Once accomplished, this project can have a truly transformative effect on the college. In summary, my only advice is to persist and keep building on the solid foundation that has been laid. Congratulations on a solid start of this important project.