



Visualizing Data for Proactive Decisions at Des Moines Area Community College

Dr. Joe DeHart

Executive Director of Institutional Effectiveness and Assistant to the President

> Des Moines Area Community College (DMACC)







Pronounced "Dee Mack"

- 11 county community college in central Iowa
- 21,000 fall credits students, 6,000 served while in high school
- Population base: 650,000 people
- Tuition: \$143 per credit hour







IR Model Evolution







IR Model Evolution



2020s





Technical Requirements of IR Staff

Skill	Novice	Expert
Technical	← Office, EXCEL, etc	Java, C+, etc
Data Knowledge	 ✓ SIS user, faculty, etc. 	DBA

 SAS Enterprise Miner and Visual Analytics are like automatic transmissions. A lot happens in the background to let the driver focus on the road ahead.





Predictive Analytics

- Big Data
 - Cheap storage, data warehouses, faster databases
- Leverage past years of data on thousands of students to predict outcomes on future students
- Logistic regression and beyond
- Multiple models, model evaluation, and scoring of new data
- Uses data to create new, more powerful data





Predictive Modeling at DMACC

- Models created:
 - Likelihood of success in first college-level English course (36 pre-attendance variables, 4,500 students)
 - Likelihood of success in first college-level Math course (36 pre-attendance variables, 3,500 students)
 - Likelihood of being placed on academic warning after student's first semester

(45 pre-attendance variables, 94,000 students)

DIVIACE DES MOINES AREA COMMUNITY COLLEGE



ACT/Compass Math Exam



All ACT/Compass Exams Model



All Variables Model













All ACT/Compass Exams Model



All Variables Model



Best Model







Important parts missing..

- Too much data at DMACC and not enough meaning
- Standard reports and graphs are time intensive and hinder investigation and meaning
- Need the statistical methodology, but hidden
- Need for data is increasing but not as fast as the want for data
- Data structures not tied to mission and strategic plan





SAS Visual Analytics

- Nesting, hierarchical data structures held in memory that provide click and select usability for users.
- Graphics engine encourages comparisons between data, discovery of trends and hidden relationships. Not a single, best answer
- SAS statistics engines make sure you get sound explorations presented thorough color and structure.
- Allows all DMACC employees to have access to lots of data, frees up IR staff to do other things.
- Our up and coming administrators love it!
- The data is structured and prioritized for the user according to the strategic priorities of the college.





SAS Visual Analytics











SAS Visual Analytics

- Adding dichotomous variable to our data warehouse to all logistic regression type investigations (course retention, pass, success, f2s, f2f, grad)
- Add zip codes to student data to facilitate geospatial capabilities
- Creating datasets for strategic areas we previously ignored (graduates, financial aid beyond Pell status, adult basic ed, workforce training, more to come)





Sas Visual Analytics

Why SAS Visual Analytics?

- Need for people to interact with data to achieve understanding
- Proven track record with me and DMACC.
- Ability to leverage existing data
- Integration of all our data into one platform, start-tofinish
- Bullet proof
- Fast! Data pre-loaded into memory
- Statistics: easy to use, more advanced than other tools
- Cost
- Customer support





Thank you!

Questions and Comments?

Contact info: Joe DeHart jcdehart@dmacc.edu Office:(515) 964-6279 Cell: (515) 249-3701

Missi Poynter Missi.Poynter@sas.com