

Business Advisory for Information Technology 9/26/17

Called to order 11:30 Adjourn 3 pm

Present -Neil Posmer/Elmwood Park, Dan Renaud/Proviso, Stephanie Sneath/Ridgewood, Patty Sarkady/Riverside-Brookfield, Brian Davis/Oak Park & River Forest, Frank Holthouse/Leyden, Anna-Marie Tamayo/ Webitect, Paul Baker/Webitect, Brian Matzelle/CompTia, David Anderson/Triton, Anne Cothran/DVR.

Dr. Cothran opened with a brief review of the materials in the notebooks for each district, including upcoming events, labor market info, course descriptions, class resources.

Faculty expressed areas of interest for today - Stephanie interested in cyber security, Frank commented the pace of the IT industry is changing rapidly, and questioned when will ISBE have new course updates? Brian OPRF teaches video game design in web design sequence.

Introductions were followed by opening discussions led by Paul and Anna from Webitect:

The IT Industry is changing constantly:

In 1980 no design programs, so you worked in apprenticeship with developers and designers - learn while you do, however, in last 6-7 years Word Press and other programs created easy ways to make websites. Now Webitect uses a lot of design research on messaging, and database work. They have found that new practitioners lack a good background in database programs, so there are things they cannot accomplish for the client. So they need to work with a good developer. Students need a design communications background. Designers and developers need to have intelligent conversations. Designers need to know color theory.

IT is a rapidly changing field in both skills and employment options. The "easiest tools" are not the way to go. Kids are getting skills at younger ages, so older students need more complex skills. Previously kids were not as exposed to html, etc. so now kids are developing intuitive knowledge earlier. People take on-line courses on their own, and what they become passionate about becomes the future. In 90s looked like the IT industry was moving towards standardization, but the technology changes so much, by the time you become a specialist, new technology has already become available. Broadening of the field means coding will be required of everyone. Computer science should be in all curriculum, not just specialized curriculum. Computing will become like writing. Coding as a basic literacy across the curriculum. Coding will become the new literacy.

Software engineering is creating the tools that other programs like Word Press need. Practitioners must be able to understand how to approach content. Specialized levels of other fields, like engineering, use the writing of code. Interns assume when they program, it will work. They must learn to read the error messages!!! Endless repetition of testing for all cases as software is built is what makes the computer and program work.

To grow Developers, identify students who are really serious, and give them opportunities for field experience. Many people at age 20 want to design, but by age 30 they cannot do the job and drop out. Demand for developers is dropping in silicone valley, though not overall, yet. Developers need "that zone" to work in, but must have details on what the client needs. They have to be able to talk about goals and solutions, and do things in phases. Good developers want to spend the time, which costs (budget). Problem in employment - large companies are replacing IT departments and hiring Indians at lower salary in order to save money.

How to prepare the variety of students across our classes? Third party credentials. Like Microsoft credentials. Webitect does not interview people with industry credentials, because those people won't take chances, and good Developers need to take chances. Developers need tremendous talent for ambiguity. Need Design Thinking. Technology is moving towards open source coding.

Non-Traditional Employment

Some teachers said more females are signing up for web development, others said female enrollment is dropping. Females are always a minority. Girls are deliberate in planning their choices.

Women take calculus and extra math in high school, but high numbers do not translate into the workforce. Anna has never been in a group where more than 20 percent of the company workforce is female.

Workforce benefits from diversity, but there is resistance to it in the workforce. At computer conferences 35 percent of attendees are female (but not the workforce). 47 percent of workforce are female, but only 20 percent of Stem field are female employees. Do women self-select out because they are uncomfortable as the minority in the room?

Social media hurts women's self-image by taking selfies all the time and only focusing on appearance. The IT Work environment is hard on women. Some male tech groups are attacking females as inferior. We need to think of the Management vs Unions model - the need to "inoculate" workers against pressures.
... Need to inoculate women at an early age to prepare them to handle the social pressure and discrimination.

Anna/Webitect- ... Look at subject matter. What if we allow more diversity in subject matter in our computer classes. How should we look at curriculum? How students select class projects - boys choose gaming. We have harnessed their thinking for gaming. Women's thinking is different, but they have intrinsic skills - Math progressions in knitting patterns can be very complex, but are not represented as examples in how to code. There is no female equivalent of Steve Jobs or Bill Gates as roll model for female students

Comptia initiative for women- Women industry champions go out and talk to students. Comptia Kathy, women in computers champions group will meet with our students. Brian will send her contact information to Anne Cothran.

Triton on post-secondary and the labor market

Question about dual credit options - Triton does not have much IT dual credit? Dual credit in high school, faculty – need 18 graduate hours in content area

Certifications for students - arm them with facts about it jobs, and earnings. Digital world is more than coding developers. It is everywhere in all industries.

Does Triton offer IT in other programs? There are several departments at Triton that work with different aspects of the IT field. Eg: Visual communication dept. are tool users, not programmers.

Triton's goal is to prepare students to get a job or go on to 4 yr school. Triton cannot offer course unless universities say they will accept it. Illinois articulation initiative. IAI guarantees transfer to universities.

At Triton students in networking program can move into employment. HR depts use computer credentials to determine qualified candidates. With Coding skills, people can make a decent living without extensive years in college. College can create big debt with long term commitment. Average students in our courses, may not be in corporate IT, but can begin to develop credentials. Listings on Indeed.com specify it certifications in the postings. When applying, use job description key words in the application and resume to make the first cut in application reviews.

How to move students from high school to Triton? Issues include - Enrollment tests, Get zero level courses out of the way - dev ed, courses. The challenge with proficiency credit is that it does not transfer to universities.

Triton Cohort for network + and A + available

Implication for our courses? Include Javascript.

Stephanie interested in cybersecurity, and IT integration in different fields, like anthropology or building technologies, because technology is everywhere. Coding is just another language. The new literacy.

Frank interested in design thinking which we do not present to students often enough

Do we teach them to sit back and ask questions? Learn through a project with specific goals.

Brian. . .app development. . .how to include in courses? Start with web apps. More advanced apps need to test on 35 different tech. platforms (all diff operating systems/ phones, ipads, etc.) OPRF Incubator program students want to make apps. Gaming language. Re: motion and 3D.

Students are impatient and want to see results right away. Websoket services speed up interaction more than html. In Google docs, people can see each other writing. Raspberry pi can program for activities. Encourage our students to be genuinely interested in the world, and know how to do things. It is not enough to look good on paper.

What kind of entry into cybersecurity can we offer in high school?

Projects – eg: exercise, everyone create a password, and then learn how to break it. 8-12 character password easy to break. Some teachers use Google unit on internet safety.

Cyphers -Make students send a message using a cypher

Unit in course, how to make good password, avoid a phishing scam, CompTia has a short course on this

Participant Evaluations

What was the most beneficial for you from this meeting?

Sharing of ideas with industry professionals
Great Discussion with industry representatives.
Hearing from people in the industry and college level
Binder Information
Learning of concepts I can introduce in my classroom.
Gain insight about desired employment skills and what other teacher are doing in their classrooms.

What could be improved next time?

A list of resources to find links to the information covered
I don't know how, but maybe a moderator to keep the conversations from going off on unrelated tangents
Day long workshop to have more time
Some time to connect with teachers from other schools. Sharing ideas
More time sharing ways we use tools/software/types of code.
Maybe teachers can share project ideas that have worked for them.

How will you share this information with your colleagues?

Look at teaching more using the design thinking process
I will share my notes with Tony Pecucci, Business Ed Chair.
Team meeting time
Discussions during TCT time
I can share my experience with my department; however, I am a singleton. We work together to find ways to incorporate new ideas into our classrooms.
Information will be shared in department PLCs.

The Business/IT faculty group will meet on January 25, 2018. Content will include sharing information on classroom resources and practice, and discussion of budget items that could improve their programs for the following year.