

COMPUTING FOR THE FUTURE

Different Degrees of Education

“Liberal Arts Lose Luster” was the headline of an article in *The Wall Street Journal* earlier this year. It noted that majors such as history and philosophy on some campuses were being scuttled in favor of nursing and engineering.

It also stated that the number of humanities degrees declined by almost 9% between 2012 and 2014, according to the American Academy of Arts & Sciences. For a specific example, it cites a jump from 9% of all bachelor degrees in 2005 to 17% in 2015 for these three disciplines – homeland security, parks and recreation, and health care.

The story quoted a former college president saying, “People just can’t afford to be educated; they almost have to be trained.”

Closer to home, the 30 schools that comprise the Independent Colleges of Indiana (ICI) did see a 26.5% increase in STEM (science, technology, engineering and mathematics) degrees from 2010 to 2015. A valid comparison of changes in humanities degrees is not possible due to the lack of a clear definition of what falls in that category.

Jake Docking, ICI data and policy analyst who provided the STEM statistic, adds, “We don’t see our institutions backing off programmatically from the humanities. They still view that as an integral part of the educational program their students go through.”

Mary Ellen Hamer, executive president for ICI, puts it this way: “Whenever you see surveys of employers saying what they want or need in an employee, it’s always those liberal arts/humanities skills – communication, problem solving, self-discipline, teamwork, creativity.

“Those are the things that even if our schools are having their students major in STEM or other fields – they still get a very strong foundation in that because they’re not just training them for the first job, but for all the jobs they might have over the course of their careers.”

Docking points to a recent example – a coding academy in June that included a variety of liberal arts majors. “That combination of technical skills that are practical for the workforce but also the communication and teamwork make you a stronger employee throughout your career.”

Note: See Page 10 for the final installment of a five-part series from Indiana Humanities on business leaders who are successfully combining STEM and the humanities.

RESOURCE: Mary Ellen Hamer and Jake Docking, Independent Colleges of Indiana, at www.icindiana.org

Helping the Teachers – and the Students

Long term, Mimir wants to “essentially follow a programmer through their entire education and career life cycle.” For now, the Indianapolis-based developer of an education technology platform is among the most valuable resources for computer science teachers.

Company CEO Prahasith Veluvolu describes the flagship product, Mimir Classroom, which was developed by he and other company leaders while they were students at Purdue University.

“We have a platform for instructors to teach their computer science courses. We provide no content as of right now, but that’s something we’re working on adding,” he offers. “Instructors purchase our platform, take their content, upload it to our system and we automate their entire grading process. Students log in to our platform, turn in their work and essentially get their grade in seconds.”

The automation brings additional benefits, Veluvolu notes. “Take a math problem for example. You can grade it in one way. An essay problem, you can’t. Code is like a math problem. There’s a right answer and a wrong answer. There’s a lot of ways to get to that right answer and we’re able to account for all those. Teaching assistants and instructors can spend more time with their students instead of being locked away grading assignments.”

Universities (from single courses to full departments and multi-campus implementations) are the primary clients, although some high schools and independent instructors have signed on. Customization of submission processes and plagiarism analysis are among the added features.

Mimir strives to assist students in a variety of ways. Among the offerings in development: free programs and content, an internship and job matching system, interview tool and more.

Veluvolu believes Mimir will eventually help fill a need between in-person education with an active instructor (“very effective but the problem is they can’t scale”) and massive open online courses (“which scale like crazy but have completion rates of less than 10%”). “Our approach is to build our products kind of in the middle – a hybrid approach. We want to be where people first learn how to program and we want to power their more professional courses.”

And the company is “back home in Indiana” after 2015 participation in Y-Combinator, a Silicon Valley start-up accelerator.

“For us, Indiana is home. All three of us pretty much grew up in Indiana, went to Purdue. We also have the professional network and connections we built while getting Mimir off the ground. It’s important that we stay close to that,” acknowledges Veluvolu, who was born in India but moved to the United States at a young age.

“We saw the ecosystem growing. Ten years ago, I don’t think Indy would be a good place to start or build a tech company. Today, it definitely is. Silicon Valley is a great place to be for tech but it’s very built up. Being here – we’re here while it’s starting.”



Indiana roots led the founders to bring Mimir back to the state after its participation in an accelerator program in California.

RESOURCE: Prahasith Veluvolu, Mimir, at www.mimirhq.com

Developing Educator Connections



Educators participate in a session at the Nimblejack offices in downtown Indianapolis.

Providing educators with the opportunity to gain firsthand business experience that they can take back to their classrooms is growing in popularity. Add a computer science focus to the mix.

Nextech's Educator Externship program in June was a five-day immersive experience for 18 teachers (primarily high school with a few from the middle school level) at eight Indiana employers. While they came to the program with an average of 11 years of teaching experience, only one and a half years, on average, was spent teaching computer science and only three of the 18 possessed relevant industry experience.

Nextech President Karen Jung says that last figure is significant.

"The majority of these educators had

zero previous industry experience, so they don't really understand the full context of the material they are teaching and how that applies to the real world. One of the big outcomes," she continues, "was to provide that context. So we were doing a session on big data to better understand how Finish Line thinks of data in terms of inventory or e-commerce. Another element was to ensure the teachers walked away with lesson plans.

"Take those two elements, plus the content already provided, and it builds a sense of confidence. The teachers feel more prepared to go into the classroom and teach computer science."

That was certainly the case for these two, among those that provided feedback.

"Holy cow! Thanks for a great week!

This has been one of the coolest, most insightful professional development opportunities I've done in nine years of teaching."

And the second respondent: "My number one takeaway is a new appreciation for the cutting-edge opportunities that exist in tech right here in Indiana ... that we had the chance to not just observe, but to also engaged in deeper discussion with executives and high-level decision makers was an opportunity that would have otherwise been beyond my reach."

Jung reports more than a few "aha" moments in activities that included these topics and more: demystifying the cloud, the product development lifecycle, agile development and designer/developer collaboration. "A general realization was how many different careers there are inside tech – it's not just coding."

The effort is far from a one-shot deal. Educators and the business leaders they teamed with are now part of a community that will come together for additional events and experiences. Nextech also hopes to grow the numbers of participants and company partners in future years.

Jung terms it a "good outlet for companies and individuals to give back," but also practical for them to look long term.

"We're faced with a talent gap now and that gap is projected to grow exponentially. You can either look at as I've got to fill the 100 jobs I've got right here in front of me the next two years ... but if I want to grow my workforce for years to come, I've got to think about getting more students interested in jumping into that pipeline."

RESOURCE: Karen Jung, Nextech, at www.nextech.org

Web Exclusive: Two questions for two entrepreneurs. www.bizvoicemagazine.com



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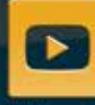
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