Samuel DiPaola, Honeywell senior technical training specialist

Will a new chartered school help fill apprenticeships and jobs in the construction trades?

A Civic Caucus Focus on Human Capital Interview

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Present

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Summary

According to Samuel DiPaola, senior technical training specialist at Honeywell, not enough people are being exposed to the option of apprenticeships that provide training for the construction trades. He says high schools don't give students information about apprenticeships, which are available right out of high school, and many parents are reluctant to have their kids go into the construction field. Neither the schools nor the parents, he says, understand that today the construction trades are highly technical fields. People often view apprenticeships as something for people who can't make it into two-year or four-year colleges, which he says is far from the truth.

DiPaola points out that a lot of construction workers are going to retire soon and there aren't enough trained people to fill those positions. Yet there is room for at least 400 new construction trades apprentices each year in the metro area. And he maintains that mandating a certain percentage of minorities be employed on public-sector construction projects doesn't solve the problem of low numbers of minorities in construction jobs.

To provide a pathway to apprenticeships, DiPaola is working to start a grade six-through-14 chartered school that would introduce junior-high students to basic construction concepts and then continue a general overview of the construction trades through 12 th grade. The school would provide instruction

in the relevant math, reading and sciences, as well as the complete state-required core curriculum. The goal would be to graduate students who, if they choose, would be ready to apply for apprenticeships in the construction trades and could pass the apprenticeship admission test.

Biography

Samuel DiPaola is senior technical training specialist at Honeywell's Building Solutions Division in Golden Valley, Minn., a position he has held since late 2014. He runs training classes for Honeywell heating, ventilating, and air conditioning (HVAC) technicians and customers. Prior to coming to Honeywell, he was training director for nine years at the Statewide Limited Energy Apprenticeship Joint Apprenticeship Training Committee (JATC). There he trained low-voltage apprentices for the International Brotherhood of Electrical Workers (IBEW) electrical union.

From 1998 to 2005, he was an instructor and, later, director of Electrical and Electronics at Dunwoody College of Technology in Minneapolis. Prior to that, he was an electronics design technician in the temperature transmitters and temperature sensors department at Rosemount Engineering. DiPaola is currently working to start a grade six-through-14 chartered school for the construction trades.

Background

The Civic Caucus has released two recent statements on human capital: one in September 2014 laying out the human capital challenges facing the state today and in coming years and a follow-up paper in January 2015 offering recommendations for maintaining a high quality workforce in Minnesota. The Caucus interviewed Samuel DiPaola to learn about the role of apprenticeship programs and a proposed chartered school in training people for the construction trades.

Discussion

There aren't enough people being exposed to the option of apprenticeship.

Samuel DiPaola said that in his previous position as training director for the IBEW, he would send out literature and go to career fairs and high schools to tell students about construction trade apprenticeships. He found that students were all getting information at school about two-year and four-year colleges, but they were not getting information about training programs in the trades available right out of high school. "Students were not getting access to information on how to get into apprenticeships," DiPaola said.

The Minnesota Department of Human Rights has found that the percentage of minorities in construction fields is lower than their representation in the total population. For example, DiPaola said, minorities make up 30 percent of the population in Hennepin County, but less than 10 percent of construction workers.

The problem of too few students knowing about the option of apprenticeships is a combination of schools not getting the word out and a feeling by parents that they don't want

their kids going into construction jobs. "It's a parent issue," DiPaola said. "They don't understand that today the construction trades are highly technical fields. But parents are reluctant to push their kids in that direction. They think those jobs are beneath them. It's absolutely not true."

The construction trades' efforts to get students to apply for apprenticeships are not working. "We were not getting people walking through our doors," DiPaola said. The students who were applying had family members in the trades or knew somebody in the trades or in an apprenticeship program. "They knew what it was," he said. "Nine times out of ten, it was word of mouth and, only very rarely, a teacher, the school or a parent." He said that was true of all construction trades.

The other disconnect is that apprenticeships are under the state Department of Labor (DOL) and education is under the state Department of Education (MDE). "They don't talk to each other," DiPaola said. "Because apprenticeships are handled by the DOL and are driven by employer training, they're not put in the same category as the education you would receive in a two-year or four-year college."

People view apprenticeships as something for people who can't make it into two-year or four-year colleges. "That couldn't be further from the truth," he said. Kids who are developmentally or educationally challenged and can't do basic math can't make it in apprenticeships, either. "The kids the schools were sending us could barely make it through ninth-grade math and couldn't read at even the sixth-grade level," he said. "They can't learn advanced electrical concepts or advanced plumbing. You have to have a certain amount of physics and science to do these types of jobs."

DiPaola is working to start a grade six-through-14 chartered school that would start introducing students in junior high to basic construction concepts and continue a general overview of the construction trades through 12th grade. He hopes to locate the school in Minneapolis and to have 30 to 40 students at each grade level. Its sponsor is Innovative Quality Schools, a single-purpose chartered school authorizer.

The school would use project-based learning and the students would interact both with their instructors and with community experts, DiPaola said. "There will be a lot of interaction with the real world and also a curriculum based around a general overview of the construction trades," he said. "We'd give them the relevant math, reading and sciences." By the time they reach 12th grade, they'll be ready to apply for an apprenticeship, if they choose. "We'll help them get into that right out of high school," he said. "We'll make sure they have the right skills to pass the entry-level aptitude test for an apprenticeship. And we'll give them a basic knowledge of the industry." He'd like to be able to get juniors and seniors into summer internships.

DiPaola said the school would be an especially good fit for technically minded kids and kids who like to build things. The school's focus would be on getting students into jobs right out of school and not so much on getting them into four-year colleges. "I see apprenticeships as the starting point," DiPaola said. "A lot of kids don't have money for school, so the idea would be to get them into a working career early on. They get their hands into the industry. If they decide they want to continue their education to higher levels, their employers will send them to school." And, he said, a lot of contractors started in apprenticeships and worked their way up through the trades.

He said if students decide the new school is not for them, they'd have been studying the relevant core curriculum for grades nine through12, so they could easily move to other schools.

An interviewer asked if it would be better if the school were a Minneapolis district school rather than a chartered school. DiPaola said he realizes that it will take constant marketing to recruit students for the school and to bring in corporate sponsors. "You have to convince companies that this school is going to generate a workforce that will be trainable when they finish school," he said. "It's going to be a challenge. But being in the charter setting and not under the Minneapolis umbrella will give us the freedom to do it the way we want to do it."

The proposed chartered school will have some licensed teachers, who will work in tandem with community experts. The school will have to meet the state requirements for core curriculum, DiPaola said, so the school will be hiring licensed teachers in areas like math and English. "That doesn't mean we can't have industry professionals come in and work with those teachers," he said. "It'd be a combination in a cooperative environment, building the curriculum with the licensed teachers and the industry professionals. I don't see that as being an issue."

DiPaola doesn't think finding instructors for the new school will be difficult. "I envision stealing industry professionals and getting them to teach," he said. "There are tons of technical training specialists out there who would love to do this type of work."

Training in the school will not be real training for work, but will aim to get the students into construction careers. Like Construction & Career Academy, a similar, very successful chartered school in Rhode Island, the Minneapolis school would not be preparing students for construction licensing exams, DiPaola said. Instead, it will prepare them so they've met the state's core curriculum requirements and can walk into any apprenticeship program and pass the admissions test. Grades six through 12 would be a career awareness program that also teaches students the math, science and reading skills they'll need for their apprenticeship programs and careers.

The school could also offer companies the ability to have their people trained in grades 13 and 14. "We could tailor special classes in grades 13 and 14 and create apprenticeship programs within the school," DiPaola said. On one day a week, the school could deliver to students the content employers want and four days a week, students could work at a job, he said. The companies would pay the school for these special classes, which would create a revenue stream to help the school. He said the school could also offer classes to help people keep their licenses.

"We would not only be supporting the student to get the job, we would also be supporting the employer to help keep their people trained," he said. "We could tailor that to whatever their needs are." For the main part of the school, the grade six-through-12 portion, DiPaola said funding would come from the state and from corporate donations.

You're not going to succeed at anything if it's not something you want to do. "That's why kids are having such a hard time in school today," DiPaola said. "They don't see the relevance. They're not enjoying it. They're sitting in these classes thinking, 'What does this have to do with anything?' But if

you get kids into a school where they say, 'I want to do this; teach me this,' they're going to be like a live wire, alert, on fire, wanting to do it. You've got to get kids to find their interests early, in sixth or seventh grade."

Today, we're pushing kids into two-year and four-year schools and we're not helping them focus on what they'd like to do for their careers. "Kids are ending up in two-year schools and they're wallowing," DiPaola said. "They show up for their classes wondering how they are relevant to what they want to do with their lives. And they're spending $50,000 a year wondering why they're taking these classes."

"We had many people applying for apprenticeships when they were 25, 26 or 28, who wish they had done that when they were 18," he said. They've gone to college, are $100,000 in debt and can't find a job.

Apprenticeships are not just for construction, but could be used for anything. DiPaola said there could be apprenticeships for physicians, dental hygienists and teachers or for any industry. "Any career is mainly learning the trade," he said, "learning the aspects of the job, learning the technical pieces and putting it all together."

A lot of construction workers are going to retire soon and we have no way of filling all those positions. DiPaola said the average age of construction workers now is 45 and people can't keep doing construction when they're 65. "There's going to be such demand within the next 10 years," he said. "There's going to be a point where there will be a huge loss of labor through retirement, but we're not filling those jobs as quickly as we were."

"There is so much need for construction around the country," he said. "There's so much repair that needs to be done. We have an infrastructure that's falling apart. I guarantee you that within 20 years, construction jobs are going to be gold. People are going to be wishing they'd gotten into the field early enough."

There is room for at least 400 new apprentices each year in the construction trades in the metro area. While he was with IBEW, DiPaola said, the organization brought in 60 to 65 new electrical apprentices each year. In addition, other construction trades, such as plumbers, pipefitters, HVAC, tile, cement, carpenters, equipment operators and ironworkers, have similar numbers of apprenticeship opportunities each year. So kids graduating from the new chartered school will have plenty of apprenticeship opportunities, he said.

Hands-on training in industrial arts today could be done in a virtual world. DiPaola said studies show that when test pilots train using flight simulators, their brains are learning in the same way as if they were training in a real plane. He noted that IBEW is now training substation linemen with an interactive, three-dimensional game. He said an industrial arts curriculum for high schools could be designed to include this same type of virtual training.

There are three aspects of training: quality, cost and access. DiPaola said employers are more focused on cost and access: how much will it cost to train my people and how can you train them and not take everyone off the job during the training? Employers are concerned about productivity.

He suggested that employers tend to only care about training that's compliance-driven, such as OSHA training. "A lot of companies are not willing to put out the money if it's not a compliance component," he said. "You must convince companies they'll see benefit from the training. Corporations will look at whether an employee's productivity increases after training. If they don't see any benefit, they're going to walk away from training."

DiPaola maintains that colleges have the same issues with quality, cost and access, but they push the cost off onto the students. So the colleges, he said, look more at quality and access issues.

Mandating that a certain percentage of minorities be employed on public-sector construction projects doesn't solve the problem of low numbers of minorities in construction jobs. "Mandating percentages on projects like the Vikings Stadium forces contractors to hire untrained people who haven't been through an apprenticeship program and have no skills," DiPaola said. "They haven't had the proper training, so what usually happens is the foreman basically finds them things to do. These people get disgruntled and decide they don't want to do those things for the rest of their lives. So they leave the jobs and don't get careers in construction, because they didn't come in as apprentices and never had the proper training.'

"We're not setting them up for any type of success," he continued. "That never works. That's not going to create construction workers. It just gives people temporary work to push a broom and they end up leaving."

Some nonprofit organizations that offer construction career training are not successful because they're too political. "They've got a different agenda," DiPaola said. "It's not really about giving these individuals the proper connections and training. It's about saying how many people they've put through their programs. But there's no retention once these people get jobs."

Legislators, the state Department of Education (MDE) and the public need to believe technical education at the secondary level is worthwhile. "Most school districts do not believe in vocational education," DiPaola said. "They don't believe in it. The reason it's failing is because they think it's a secondary, lower-level education. We must convince people it's as technical and advanced as any other degree, like sociology or psychology."

He said the biggest issue is that people don't believe in the trades. "We need to get MDE to really believe that vocational education is acceptable," he said.

The system we currently have is broken. "Kids are going into debt, not finding jobs, living with their parents till they're 35 or 40," DiPaola said. "Throwing money into the educational system is like throwing it down the drain. We need to tear the system apart and look at it from a different point of view."