

Episode 6, *Silver Buckshot: A Micro-Credential Approach to Training and Education*

[music]

Tim: So, I think industry will value this because they see a workforce shortage, and while micro-credentialing is not the silver bullet, it's definitely a piece of silver buckshot that can solve that problem.

[music]

Mike: From the Center for Occupational Research and Development, welcome to Preparing Technicians for the Future of Work. I'm your host Mike Lesiecki. In each podcast we'll reach out to people who are actually on the frontline of the future of work and hear what they have to say. That means interviews with industry leaders, working technicians, and forward thinkers in the field. And, in every episode, we will suggest action that you can take. We want to inspire you to take that action.

This podcast is brought to you by the Center for Occupational Research and Development, known as CORD, with financial support by a grant from the National Science Foundation's Advanced Technological Education program. Opinions expressed in the podcast do not necessarily represent those of the National Science Foundation. You can find out more about our project and our approach at "preparingtechnicians" (all one word) "dot ORG."

This is Episode 6 in our podcast series. Before today we've heard a lot from industry about preparing technicians for the future of work, but some education programs are responding to industry's needs and our students' needs. And we want to discover how learning opportunities need to shift to be more personalized, more practical, more applied, and more nimble. Today we're talking with Timothy Thomas. He's the Associate Dean for Physical Sciences, Engineering, and Applied Technology at Mohawk Valley Community College in Utica, New York. Tim, it sounds like you've got a lot of different responsibilities at the college. Tell us what you do on a day-to-day basis.

Tim: Hey, Mike. Yeah, so every day is different. I have a lot of responsibilities, including curriculum design, faculty evaluation. But what I enjoy most is working with our external partners, including students, pipeline work with our local high schools and vocational K-12 schools, and our industry partners. I like working to create internships to

Episode 6, *Silver Buckshot: A Micro-Credential Approach to Training and Education*

respond to the needs of industry, to put together quick-hitting non-credit programming, etc., etc., etc. So, not every day is the same, but they sure keep me busy here!

Mike: Sounds interesting, Tim. I like that term "quick-hitting, non-credit programs." That sounds good. Let me ask you this, Tim. You got a grant from the National Science Foundation to create a "micro-credential." Now, not all of us are necessarily familiar with that term, or we might have our own views of what a micro-credential is. But before we get into that definition, how'd you come up with that idea? That proposal to the NSF? What drove you to do it?

Tim: Well, we've been working with micro-credentials at Mohawk Valley Community College for probably about the past five years. And the idea actually came out of student government, where one of our wonderful students came up with the idea of competency-based, short-term credentials. And, likely, he read about it somewhere else. But he was the driving force that allowed us to go through our shared governance processes to be able to create micro-credentials. And I was involved with that process from the beginning. So, it was always in the back of my mind that we could use micro-credentials to train the incumbent workforce. So, with that foundation of five years of thinking about micro-credentials, I thought this was a really nice idea: to try to see it play out. And, in order to do so, we would require some funding. And NSF seemed like a great place to go for that.

Mike: Good! Congratulations! I know it's a very competitive program at the NSF. So, kudos to you and your team for getting that grant. Now the technology you're focused on is unmanned aerial systems, right? Or drone technology?

Tim: Correct.

Mike: Was industry involved in the creation? Either at the grant stage? Or at the micro-credential development stage? How was industry involved?

Tim: Well, given that these drone technologies are emerging in nature, we've been working with industry from the get-go, from when we designed our initial AAS degree in Unmanned Aerial Systems Technology. So, we've always had this ongoing dialogue with industry.

Episode 6, *Silver Buckshot: A Micro-Credential Approach to Training and Education*

Now, when we were putting together the grant idea, we asked for feedback: "Is this something that you would value?" And we had to get the right answer to that question from industry before we spent all the time putting together the proposal. Now, industry, and our farmers, and our, you know, our local power authorities, they all said that they would be interested in participating in a project with us. So, industry has been involved from the get-go.

We looked to our local industry to see if they would find value in these short-term competency-based credentials. And we needed a answer of "yes" before we felt that it was right for us to go forward, looking for funding to put together these micro-credentials. Given that industry stated that they "found value in micro-credentials," we didn't use them to help write the grant proposal, but we have been interacting with them ever since the award to do the curriculum design work, to find applied learning experiences for our students, and so on.

Mike: Excellent, Tim. Now, tell us, when I think of a micro-credential, I'm pretty sure I don't mean "digital badges." That's a pretty common term, and some people call "digital badges" a "micro-credential." But we're talking about something that's related to a sequence of courses. Tell us exactly what this micro-credential is. How many courses? How long does it take me to get it?

Tim: So, I referenced earlier that the ability for MVCC to provide micro-credentials for a student took about 5 years: from its idea, to our ability to enact them. And as part of that 5-year process, we had to go to our Board of Trustees, and get permission for us to confer micro-credentials. In their policy they define micro-credentials as being a compilation of credited courses. And they have to be between 9 and 15 credit hours. So, with our micro-credentials that we've created through this grant project, we are somewhere in that range of: no fewer than 9 credit hours of coursework, no more than 15 credit hours of coursework. And we've designed each of these micro-credentials to revolve around the attainment of a single competency. That could lead to either upskilling (make somebody more employable) or could lead directly into work for somebody who is currently not working.

Episode 6, *Silver Buckshot: A Micro-Credential Approach to Training and Education*

Mike: Tell me the name of one of these, Tim. What's the name of one of the credentials? How many courses? How many credit hours?

Tim: So, one of them is the Small Unmanned Aerial-Systems Operations micro-credential. It is made up of four 3 credit-hour courses. Students will do mission planning, and fly missions, that includes small unmanned aerial systems. So, the coursework involves courses that teach students about the FAA regulations, leads to the FAA's Part 107 (so students can fly commercially). Students get a lot of flight time using quadcopter, and multi-rotor, and fixed-wing aircraft. So, you can see, with those series of courses, we're not focusing on the other aspects of the analysis of the data that is collected from unmanned aerial systems flight, or the maintenance of unmanned aerial systems. We're focusing on just: Can you plan a mission? Can you fly a mission?

Mike: Excellent.

Tim: There are other micro-credentials, including a Data Analysis micro-credential and a Maintenance micro-credential where, in those series of courses students are learning how to do the post-processing of data, and to create reports for the end-user for the Data Analysis micro-credential. And, with the Maintenance micro-credential, students are working on the electronics and the mechanical systems of drone systems.

Mike: Well, it's sort of interesting. Depending on what you're trying to achieve, what competency you want to develop, you can go after one of these micro-credentials. How long does it take? I mean, is this a 16-week thing? Can I stretch it out? Can I compress it?

Tim: Yes, yes, and yes! It really depends on how we offer the courses. And, I think, that gives the college a lot of flexibility, as well. If we find a large enough group of, let's say, incumbent workers, and, just for the purpose of this conversation, let's say that they are engineers who want to start using drone technology in order to help them with their work. We could open up all of the courses for a specific micro-credential at the same time, and we could say, "Ok, you group of Engineers, come to MVCC for 14 weeks. Take these four courses (full-time coursework) and we will give you a micro-credential, which then says you

Episode 6, *Silver Buckshot: A Micro-Credential Approach to Training and Education*

are able to "fly a drone," or "do the post-processing of the data for a drone."

Now, it's probably unlikely that an engineer can leave his or her job for 14 consecutive weeks to come to Mohawk Valley Community College. So, we can also have the flexibility to, say, over the course of this year and a half, we are going to offer the four courses that are required sequentially, and we can offer them on Tuesdays from 4 to 8 PM. And just make a really nice consistent schedule for those individuals.

Mike: I like that, Tim. You know, at the beginning, we talked about how industry and our students want something that's a bit more nimble, a bit more suited to them. It sounds like it. This is for credit. Do I have a transcript that shows this? Can I link these things together to make a degree? How does that work?

Tim: So, all of our micro-credentials that we've created are stackable to an AAS degree. In order to get the AAS degree, you would have to complete three of the micro-credentials, and then do some General Education coursework to fulfill the State University of New York requirements for a degree.

They are on a transcript. However, the micro-credential, right now, since it's so new in the SUNY system, is not on the academic transcript. We are housing it on (what we refer to as) our co-curricular transcript.

We're also buying into a credentialing software, so we can create digital badges for these micro-credentials. And the digital badges will create a whole bunch of metadata. So, students will be able to put these digital badges on their LinkedIn account or other locations.

Mike: That's great. I think that really addresses an issue that some Technology students have. That is, "evidencing" what they know. Evidencing their competency. And things like badges and micro-credentials can really help with that, don't you think?

Tim: Yeah, I completely agree.

Mike: Tim, here in Arizona, I know none of our colleges yet have micro-credentials. So, tell me: if we were to create a micro-credential program here, working with our industry partners, what is the top three things I should watch out

Episode 6, *Silver Buckshot: A Micro-Credential Approach to Training and Education*

for from a college perspective? That is, setting this thing up within the college, what should I worry about?

Tim: I think the biggest hurdle to overcome is to get faculty buy-in. We were very, very particular in the way that we went about creating our micro-credentials. We started the conversation that actually percolated from a student. Once the student gave the idea to me, he and I wrote a white paper, just introducing the campus to the idea of micro-credentialing. We presented that white paper to our College Senate. The College Senate then tasked our Faculty Caucus of College Senate to create an Ad Hoc Committee to explore it further. The Ad Hoc Committee created a set of recommendations of how the college should proceed with micro-credentials. From those recommendations a Academic Policy was put together which eventually was approved by the Board of Trustees. If we did not take the time to go through our shared governance processes, I don't think our faculty would have bought into micro-credentials and I don't think we would be where we are today.

I would also recommend that you make sure that the micro-credentials you're creating do lead to the attainment of some sort of competency. It's very easy to say, take English 1, English 2, and Public Speaking, and now you have a Communication micro-credential. But, in my opinion, taking those three courses doesn't necessarily make you a great communicator. If we at MVCC started rolling out micro-credentials like that, I feel like the faculty and the rest of the college would start losing faith in the whole idea of micro-credentials. So, we do our due diligence when we're putting together micro-credentials. We work with our industry partners to make sure that receiving the micro-credential could lead to increased opportunities in the workforce.

And the third thing is, I think it revolves around using industry partners. When we're designing the micro-credentials, we have to make sure that we're communicating well with our industry, but we also have to recognize that our industry partners are not masters of curriculum design. So, we have to put together structured activities to help the industry partners think about what they actually require for their jobs. And we could take that information and roll it into a nice cohesive and concise curriculum.

Episode 6, *Silver Buckshot: A Micro-Credential Approach to Training and Education*

Mike: That makes sense, Tim. I like the idea of really working together—education and industry, what you just said—helping industry think about what they want. I mean, that's true, because they don't always know what the options are on the academic side. So, that partnership, I think, is very important.

Let me ask about this, and then we'll wrap up. Did you ever trip up? I mean, did you ever get home from work one night, and yell at the kids, or kick the dog... Sorry, I'm just teasing about that! And say, I wish I wouldn't have done that. Anything that you tripped on that we should watch out for?

Tim: Yeah, going back to the creation of micro-credentials. I'm the type of person who, I see what I perceive to be a good idea, and I just want to run with it! So, when I wrote the white paper. I thought everybody's gonna buy into the idea of micro-credentials. And it's not going to take five years for us to go from zero to being able to offer micro-credentials. I wish I had spent a little more time preparing before I presented to our college Senate, because I was hit with a lot of hard questions at that presentation. And since I wasn't overly prepared, I remember just "rope-a-doping" for a while, and taking it.

Mike: Yes. All right. Good. So, we're sort of listening, and taking this to heart, because this sounds like a darn good idea. And I have to admit sometimes that timeframe, which I bet might not be five years for everyone, especially since there's precedent from efforts like yours. But it will take some time. And I think helping our industry partners understand that there are hoops to jump through, and hurdles to go over, to make this happen.

Last question. Tim, will industry really value this? Do you have any sense yet, if they really see value?

Tim: I think they will value it, especially if community colleges prove their agility in being able to offer courses when their incumbent workforce can take them. With technology changing so quickly, Mike, you know that the skill set of 2012 is not the skill set of 2019, and it's not going to be the skill set of 2023. So, the workforce is going to have to go through more frequent training to gain additional competencies. And that's really just because of the speed at which technology is changing. So, I think

Episode 6, *Silver Buckshot: A Micro-Credential Approach to Training and Education*

industry will value this because they see a workforce shortage. And, while micro-credentialing is not the silver bullet, it's definitely a piece of silver buckshot that can solve that problem.

Mike: I like that analogy: silver buckshot. Hey, Tim, thanks for all your time today, and best wishes moving this forward.

Tim: Okay, thank you, Mike. I appreciate it.

Mike: Good-bye.

Tim: Bye.

Mike: That's it for today, listeners. A micro-credential approach to training and education.

Here's your action item. Think about a set of your existing courses that you could use or modify as one of these micro-credentials. Industry partners: help that education program define the competencies that will be addressed.

Folks, take a look in the Show Notes to see the details of the Remotely Piloted Aircraft Systems program at Mohawk Valley Community College. And also in the Show Notes, you can see the literal chapter and verse of the administrative process and language that was developed. You might want to use that as you create your own.

As always find our podcasts on PreparingTechnicians.org or subscribe on Apple podcast or Google Play. A rating and review are always appreciated.

Our series is produced by John Chamberlain at CORD. Thank you, John. And thank you, our listeners, for Preparing Technicians for the Future of Work.

[music]

Please include the following citation when citing or using content in this podcast:

Lesiecki, Michael (Host). Preparing Technicians for the Future of Work Podcast: Episode 6, *Silver Buckshot: A Micro-Credential Approach to Training and Education* (audio podcast, transcript). Center for Occupational Research and Development, Waco, TX. April 2019.

Retrieved from <http://www.preparingtechnicians.org/>