Phillips Community College of the University of Arkansas:

"Year 3 ATE-DISC Student Focus Groups – A Snapshot of Program Strengths, Challenges, & Emerging Impact"

A Report To:

Mullins Consulting
Inspired Social Research & Program Evaluation

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Introduction

Phillips Community College of the University of Arkansas (PCCUA) Advanced Technology Education (ATE) – Delta Information Security and Cyber (DISC) program is at the midpoint of its third year of functioning, through sponsorship provided by the National Science Foundation (NSF). This report summarizes the results of November 2021 student focus groups used to collect data on program experiences, utilization of supports and areas where students would like increased support, and students' suggestions and thoughts about the future of the program. In total, eight students participated in one of three opportunities. One interview was conducted with a current student at the Helena-West Helena Campus because they could not make the focus group meeting for their location. One focus group occurred with current students at the Stuttgart Campus (three students), and one with graduating students from either school (four students). Results reported here assess themes emerging within groups and will note any divergence between current and graduating students when it is present in the data. Due to the limited number of participants from the Helena-West Helena Campus, we do not make comparisons between the two campuses. It is the evaluation team's hope that these results help inform the continued development of the PCCUA DISC program at this time. As focus groups are an inherently conversational method of data collection, some students may contribute to multiple themes within each section below.

Focus Group Results

To start the focus groups, current students were asked to discuss how they first heard of the program and how they were recruited into it. This continued into a discussion of students' program experiences, including highlights, key learning experiences, programmatic aspirations, and exposure to careers and career skills. Concluding the focus groups, students had a conversation about resources, used and desired, at PCCUA and provided their final thoughts about their program experience.

Program Recruitment

Students were asked to introduce themselves and provide how they found out about or were recruited into the ATE-DISC program at PCCUA. In their discussion participants report either looking into programs of study independently or having a previous connection with program faculty (i.e., Ms. Charlotte or Ms. Grove).

Select Quotes:

Self-Research

"I was taking a class in high school, something like this, and then I just thought that since I was so good at it, I should try to master it. When I was enrolling at PCCUA, I told them what major I wanted, and they enrolled me in it." (Helena-West Helena Student)

> *"I started trying to learn programming languages on my own, and I was hitting a snag. So, I thought I should check out what the college has to offer, and that is where I found out about this program, and I decide to enroll in it."* (Stuttgart Student)
>
> **Program Connection**
> *"One of my instructors, Ms. Charlotte, she owns a business here in town, and I have an uncle that used to work for her. She told me about the program."* (Stuttgart Student)
>
> *"When I first left high school, I was in a welding program. I took graphic design to fill out my schedule, and Ms. Grove was my advisor. When I decided to go back to school for IT I went and talked to her, because I knew what she did."* (Stuttgart Student)

Program Experiences

Students were next asked what they have found to be the best part of being in the program. In response, students report positives they've gained from the learning environment and hands-on experiences (e.g., learning about and practicing coding) and the programs structure (e.g., resources available, staff time). They stress that the program is built around <u>seeing them succeed</u>.

> <u>Select Quotes:</u>
>
> **Environment and Experiences**
> *"What I actually like most about the program is learning new things about technology. I actually learned a lot about coding that I had never seen before, and a lot about hard drives and the inside of computers."* (Helena-West Helen Campus)
>
> *"For the most part, it is really hands-on. I like that. I am somebody who prefers to look at what you're actually supposed to do and do it, rather than reading one-hundred pages about how to do something. In terms of time, you can either read one-hundred pages in a book and say 'Okay, now I know how to build a computer,' or you could sit down for four hours and figure it out, like, 'Oh, I know how to build a computer now.'"* (Stuttgart Student)
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> **Program Structure**
> *"I really like a lot of the resources they have. Outside of the textbook, some of the labs that they use are really, really good. I have enjoyed doing a lot of them, especially in security. The access to that has been really a great help."* (Stuttgart Student)
>
> *"I like how when I came here for classes, yes, I had some basic classes, I had to do math, but we also did drop in some of those computer classes right off the bat. I could still get in and feel it, not just basics. I helped keep me interested in it."* (Stuttgart Student)

When asked to discuss what they have learned in the program that has really made them feel like they are getting better prepared to enter the workforce, graduating students emphasize the technical skills gained in the program and current students point to their growth in team-skills and their learning through NetLab. Graduating students also mention learning patience and learning about how to find employment opportunities.

While technical skills are central to the DISC program, it is important that students develop other professional skills. When asked about what other professional skills they are learning, students note communicating (specifically about technology), teamwork, networking, and punctuality/time management skills. Networking and punctuality/time-management were exclusively discussed by graduating students.

Current (non-graduates in Spring 2022) students were then asked to discuss what they hope to accomplish in their next year of the program. In response, current students emphasize further academic success, including developing their tech skills and earning certifications. In addition, a student mentions hoping to gain further work experience over the next year.

Selected Quotes:

Academic Success
"To start, passing the classes. I would like to see myself accomplish many things dealing with technology, coding, and seeing what's inside computers." (Helena-West Helena Student)

"Start working on certifications." (Helena-West Helena Student)

"Studying for certifications. Studying while going to class is not always easy." (Stuttgart Student)

Other Comments
"I am hoping whenever I go back into the job force, I can find something that is related to my field of study beforehand to go ahead and get experience as I go through college." (Stuttgart Student)

When asked to discuss what they have learned are the most important qualities an employer is looking for in a newly graduated IT student, participants comment that job opportunities in the area are very scarce, resulting in limited opportunity to discuss what employers might be looking for. Asked to elaborate on this issue, students explain that they mostly rely on self-searching or personal networks for finding employment opportunities. Graduating students lament the issue, explaining that they hoped the program would have done more to help identify job opportunities considering the perceived limiting local options, especially as many require years of experience which new graduates do not have.

Select Quotes:

Self-Driven Job Searches
"I have looked into it a little bit. I went online on job websites, and there's really not a whole lot of options. The closest one I could find that looked, well, half decent, that didn't require five plus years of experience was the Tyson Chicken factory, and that is still two hours from here." (Stuttgart Student)

"Mostly word of mouth, because a lot of the places close to the town here, I've worked at a lot of these places, so I know the network of people. Some of the people come through different places and you hear about some jobs, some people wanting to hire here and there." (Stuttgart Student)

Hope for More
"They should push us. I think if this program, they always feel like once you have graduated are you going to go to a four-year college? I think they should push more to find us or help us a job or help us out on doing an internship." (Graduating Student)

Current students were then asked to brainstorm ideas to help make finding employment more realistic for students. Collectively, these students present exploring remote work opportunities, contractor opportunities, and discussions of relocation, but they recognize that area

infrastructure limits corporate investment in the area and hinders their ability to work from the area.

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<u>Select Quotes:</u>

Possible Solutions
"The only thing anywhere near here was an hour and a half away. I am probably going to end up trying to do something remote." (Stuttgart Student)

"I'd probably do independent contractor work for websites, maybe a bit of game development here and there… Network administration or something like that." (Graduating Student)

"They could give us more job postings, like from indeed." (Graduating Student)

Infrastructure
"If I can't do remote work, then I really don't know because the Internet here isn't the greatest. Businesses that are related to technology don't want to be anywhere near here because the Internet won't get any better." (Stuttgart Student)

"Either the school [PCCUA] or working at a casino. It is really rare around this area. We've got to go outside of the state to find a job." (Graduating Student)

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Graduating students were asked to broadly reflect on their experience in the program, and to discuss what they have learned through the program that has helped them decide on continuing in a career in IT. In response students engaged in a discussion on the importance of networking, as with prior responses on learning gains, by "putting yourself out there" and how they have been interested in the field historically.

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<u>Select Quotes:</u>

Networking
"For me, it was just work at the help-desk or as a technician. I asked them about that, and they would say study more about security and programming, and you can get the job. You just have to focus more on putting yourself out there." (Graduating Student)

"Presenting and seeing other presentations out there, I felt like, 'okay, I got this,' you know. I can feed off other people and I got the idea that I can translate my idea to them and see where we can go." (Graduating Student)

Historical Interest in Field
"Before I was taking college courses, I had IT classes in high school. Basically, we just learned about computers and repair, and it caught my interest." (Graduating Student)

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College Supports

Focus group participants were next asked to discuss the resources they have used on campus that have been helpful in achieving their goals in the program. <u>The support by faculty in the program was the most cited support utilized</u>, with tutoring and other students also being

consistently cited supports. Other supports mentioned include computer labs and student support services.

<u>Select Quotes:</u>

Faculty Support
"My advisor, they helped me with my resume and looking at what other jobs or career paths that I can go to." (Graduating Student)

"I've never really needed resources outside of contacting Ms. Charlotte or Ms. Grove. They put their phone numbers to contact them in their syllabi if you can't get them in the office. I've texted Ms. Charlotte many times frustrated about some HTML or something." (Stuttgart Student)

Tutoring
"Ms. Charlotte and Ms. Purdy have tutoring sessions several times a week." (Stuttgart Student)

"Tutors have been helpful for my computer networking." (Helena-West Helena Student)

Other Supports Mentioned
"Student support services helped me to get a tutor for math and time management and stuff." (Graduating Student)

"Me and [another student], we helped each other out on homework. If he was stuck on a problem, I could help him get to the answer. I might be able to help give him understanding, and he would do the same for me. We always can look to each other to work out what the problem is." (Graduating Student)

Students were then asked to discuss the impact of NetLab on their program experience. While one student did say they found NetLab to be confusing, the remaining focused on how much they enjoy it, particularly how it gives them a hands-on experience with tasks they might encounter in workforce.

<u>Select Quotes:</u>

Hands-On Experience
"I love NetLab… I can build my own website on there and stuff like that." (Helena-West Helena Student)

"It gives us hands-on [experience]. You know, we'll have a book, and it could be on the networking cloud, for example, and the networking class will have a chapter that may be 80 to 100 pages long, and you can go through it, and it tells you about two different concepts. Then you get into the lab, and it goes into detail about, 'Okay, here is how you actually use it.' And then I can get it done in like five minutes." (Stuttgart Student)

"I like the labs and the virtual machines, because if I tear them, at least I don't tear up my own CPU. Well, you can always go back, restart it, and take over it in the virtual machines, which helps because then you are able to make a mistake, learn from it, and go back and figure it out, correct it. It lets you see what all is going on." (Stuttgart Student)

"NetLab has helped me problem-solve with computers. That's one thing I like about NetLab. It helps you get inside the computer and see what's going on." (Graduating Student)

> *"For me, NetLab was kind of confusing, but basically it was simple for me because I liked problem solving and all that, so it wasn't hard for me. I just followed the direction, and I learned a whole lot about what to do about computers. I learned a whole lot about the security side and what to do."* (Graduating Student)
>
> **Confusing**
> *"I find NetLab confusing."* (Graduating Student)

Students were then guided into a discussion on supports that they would like to have assisting them reach their program goals. Most students are unable to identify additional supports that they would like to have provided by the program, noting that increased self-confidence would be the most impactful change they could hope for. Some students do indicate that better direct career services support from the college, including job fairs and a career advisor, would be helpful. They also note that improvements to the area's infrastructure, particularly Internet ease of access, would be very helpful. Graduating students report that increased confidence to talk with their advisors would be helpful, indicating that even graduating students struggle with communication of their needs.

> <u>Select Quotes:</u>
>
> **Career Services**
> *"A career person, that's what they do, work with people to get internships, that would be great."* (Stuttgart Student)
>
> *"Maybe just a list of jobs or internships that you can take, whether it's just over the summer or whatever, just a list of something to look at and say, 'okay, there are the actual things that you can do with the skill you have – here is a list.' You could look at that and go from there instead of spending countless nights looking for this sort of thing and then not even finding anything other than a chicken plant that you still have to drive to every day."* (Stuttgart Student)
>
> **Infrastructure**
> *"The only things I can think of are things that are completely unaffected by the program, such as how the Internet around here is pretty terrible. With that sort of thing, it would make things a bit easier to find internships or jobs, because those businesses who would be interested in that would actually show up here."* (Stuttgart Student)
>
> **Self-Confidence**
> *"Confidence, less doubt, confidence to talk to my teachers and ask for help and stuff."* (Graduating Student)
>
> *"Confidence to just talk to your teachers and advisors."* (Graduating Student)

The focus group participants were then asked, more broadly, if there is anything they wish they could change about their experience in the program. In response, student predominately state that they are satisfied with things as they are. However, some do take the opportunity to note that they would like increased support and direction toward employment opportunities. One student explains that they would like to see increased hands-on learning opportunities.

Select Quotes:

No Changes
"Nothing at all." (Graduating Student)

"Not particularly, because I would probably venture to say that, for the resources they have, this is probably one of the best programs you could hope for." (Stuttgart Student)

Employment Support
"It is more of a lack of certain things than anything. A lack of internships or sources for that sort of thing. The labs are doing pretty great, the actual work pretty alright. It is just that there is nowhere to apply the skills that we learn, at least anywhere near here." (Stuttgart Student)

"A work-study or job-shadow project to fill in some time. I think that would be really helpful, especially for people who are hands-on learners." (Stuttgart Student)

"If there was one thing that would make things a little easier, it's just to have a closer certification testing center other than a two-to-three-hour drive away." (Stuttgart Student)

Hands-On Learning
"More hands-on work. Most of the work is online, so it could probably use more hands-on work for students, more hands-on activities instead of online work." (Helena-West Helena Student)

Toward the Future

Concluding the focus groups, participants were asked what they want DISC program organizers to know and if there is anything else they would like to mention about what was discussed in the group. Across these two discussions, students report that the program is very helpful but that they want more help getting employment and internships.

Select Quotes:

Program is Helpful
"Everything right now is great. The instructors are great, courses are great, labs are great resources." (Stuttgart Student)

"I love this program. It is a very helpful program and is making me better." (Helena-West Helena Student)

Desire Employment Assistance
"There is no transition between getting into the workforce and graduating. There is no form of internship. There are no resources for that sort of thing." (Stuttgart Student)

"I know they can't really be doing all the jobs and support, but it would be nice if the school would have somebody designated for employment support." (Stuttgart Student)

"If there is anything that is on the list to be worked on first, just getting internships. The ability to get an internship and to have the experience needed that when you actually get your degree and move on, you can do internships from there because PCC doesn't offer a four-year information systems degree." (Stuttgart Student)

> *"I would say internships, and it should be internship and job fairs. That's really what would help us out the most… Why do only four-year colleges get them? I think two-year colleges should do the same thing."* (Graduating Student)
>
> *"Job fairs would be helpful for trying to get yourself out there."* (Graduating Student)
>
> *"Internship opportunities."* (Graduating Student)

Conclusion

As the evaluation team has seen in previous years and reflected throughout the Year 3 focus group results, participants continue to provide very positive feedback on the DISC program experience. Students enjoy the hands-on learning experiences they are given, specifically as it helps them develop their IT skills and knowledge. Students also report feeling like the are better prepared for the workforce because of the tech skills developed within the program and their experiences working with others and in NetLab. Relatedly, their improved ability to communicate technology concepts to others, their ability to network with others, and their improved time management skills all lead students to feel more prepared to enter a professional role in IT. Focus group participants note that the support they have received from faculty, other students, and tutors at PCCUA have helped them succeed in the program. A key resource for most participants is NetLab, which, as the students explain, provides key experiential learning that would be difficult to attain otherwise.

Participants do note some points of frustration in the program, with most centering on their concern about being able to find employment after completing their program. Recognizing that PCCUA campuses are located in areas that have poor infrastructure, thus potentially deterring growth in the local IT field, students explain that they hope the program will do more to help them locate internships and future careers. Job fairs, planned internships (with most desiring these about one year into their program), job shadowing current professionals, and the growth of IT support within career services at PCCUA are suggestions put forward by students. Participants explain that the local jobs are scarce, and those that are present tend to be looking for people with previous experience in the field. Improvement to the infrastructure, recognized as beyond PCCUA's responsibility, is a key limiting factor, as participants note that if they want to stay in the area, they will likely need to find remote work.

There are few points of divergence between the current students and those who are graduating from the program. Among those that are present are an increased recognition of the importance of the tech skills learned in the program as graduating students enter the job market, an increased importance place on networking and punctuality/time management skills among graduating students and the graduating students' retrospective desire to engage more with faculty when they had questions. These differences seem to be directly connected to the students' immanent graduation; they are focused on what they need to gain employment and

thinking about what could have gotten them more prepared from the program (i.e., proactive engagement with faculty).

Given the results presented in this report, the evaluation team recommends the following:

- Help students find internship opportunities while in the program and employment post-program. Career Services or another appropriate PCCUA office may need to further develop their available programming in order to better serve DISC program graduates, but students are also looking to the program itself for greater support in this area. While some students are looking for local work opportunities, in these focus groups students recognized that remote work is likely in their future. Finding remote internships/work opportunities and presenting students with a list of these sources and how to apply may be one starting place to better meet this existing need.
- Graduating students report that they needed more confidence to engage with their faculty in the program. Seek to instill this confidence in students while also encouraging program faculty to promote engagement and independence. As students note in these focus groups, program faculty are accessible to their students, and this is appreciated. However, graduating students explain that they lacked the confidence to take full advantage of this accessibility throughout their PCCUA time.
- Students recognize the importance of industry certifications and plan on attaining them. Continue preparing students for these certifications and seek ways to help students take the certification tests. As one student explains, getting to and from distant testing centers may be a barrier that the program can help overcome.

Consideration of any of the above should improve program functioning and facilitate additional student success – ultimately, producing more IT professionals for the Delta region.