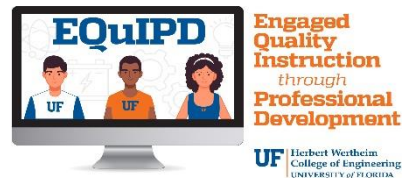


EQuIPD Winter 2021 Newsletter



Newsletter January 2021

Grant Evaluation – Measuring what Works!

We want to share the results of the Y1 survey given to intervention and control teachers in Spring 2020 after only a few months of grant training. This survey showed very strong impacts on teachers' knowledge and understanding of system thinking and large impacts on their knowledge of technology, local STEM resources, and engineering design, all of which were significantly emphasized during the professional development. Interestingly, there was no impact on teachers' comfort with technology. In interviews, teachers commented that they were learning new technologies (such as sensors and probes) with which they were not previously familiar. As a result, they actually felt slightly less confident with these new technologies. This survey met the What Works Clearing House threshold for significant findings and we are asking them to review our Y1 report for inclusion in the database of findings.

Serve Center (our external evaluator) is currently analyzing the student level data sent to them by our District partners to see the change in student practices as reflected in test measurements including Florida State Tests and District level Assessment of Learning. We will share these results when they come to us from Serve in Spring 2021.



Pre-Covid Students working in classroom (stock photo)

UF press release on Grant Results – Picked up by Multiple papers and News Outlets across Florida

<https://mse.ufl.edu/uf-engineer-brings-changes-to-floridas-k-12-stem-education/>

Serve has been in touch with Districts to conduct the Y3 observations for changes to teacher Inquiry and collaborative practices. These remote observations will start in February 2021, and continue for several months as nearly 250 teachers are observed using the EQuIPD observation protocol. If you have questions on any grant evaluations or observations, please contact PI Nancy Ruzycki at nruzycki@mse.ufl.edu or Julie Edmunds at Serve Center at jedmunds@Serve.org

Year 3: Sustainability with Districts for teacher professional development

Funding for the EQuIPD program ends August 31, 2021, but the PD program is designed to continue at the district level through EQuIPD program “train the Trainer” model. This spring, teachers will participate in two PD sessions designed to help them design PD for the control teachers in the grant, as well as teachers within their own schools and also other district teachers.

Developing PD around some of the main grant pedagogical practices for Conceptual Model development and alignment to standards, use of system thinking and process mapping to determine if lessons have all the elements needed to build out conceptual models in students, create and supplement lessons for the modeling instructional stages, and inquiry experiences for students, and formative assessments of learning throughout the lessons are a highlight for our teachers to use in training other teachers. As one Manatee teacher remarked, “When I came into the grant, I thought it was all about technology, now I think technology is part of the lesson, but this grant is really about how lessons build knowledge in students”.

To facilitate the transfer of knowledge to the districts and help teachers conduct PD to other teachers, EQuIPD grant PI and coaches will be meeting with District PD directors to help for the planning of School and District level PD.

Amy Clouthier (Hillsborough) Had her 4th grade students look at a terrarium and use it to draw a model of evaporation and condensation occurring within the terrarium.



Virtual Field Trips are a Hit with Teachers!

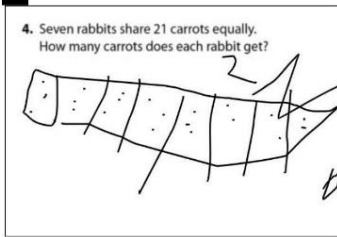
From June 1 – Dec 31, 2020 EQuIPD coaches offered 20 remote field trip opportunities to teachers within the grant to see how industries use sensors and probes and technology to support understanding the widespread application of STEM and workforce practices. The expectation is that teachers take these practices back into their lessons for students to experience relevant examples of workforce practices.

Field trips included a wide variety of companies from across Florida – From the west coast to the east coast we had field trips to - Clearwater Aquarium, Ringling Museum of Art, Arthrex, Ajax Paving, Corteva Agriscience, Boca Raton Ocean Rescue and Sweetwater Organic Farms there were exciting and interesting and allowed teachers across all disciplines to see how technology is utilized within industries and bring this information back into the classroom for students to see a wide variety of career options.

While teachers are required to do eight field trips a year (four per semester), some teachers did over 10 field trips in one semester!

For a field trip to the Gopher Tortoise Habitat one teacher from Hillsborough remarked “I increased my own knowledge and that broadens my person DOK that I can utilize in teaching habitats/biomes and animal adaptations. I didn't know this location existed so now that is a contact and perhaps I can reach out to them to do a virtual field trip for my students in the future. With any wildlife action that may be vicinal to the school, I may be able to adapt the probes/sensors that we'll be using to be able to study them in ways that wouldn't interfere with the animals at all, but that would allow me authentic uses for the probes/sensors.”

For the Arthrex Field trip a teacher from Palm Beach responded “There are so many different opportunities within the company. They employ designers, engineers, scientists, machinist, shipping, technology jobs, programmers, educators, doctors, and so many more. Students can see the vast variety of employment opportunities within a company.”



An example response from one of Ms. Nuñez's students. The student has drawn 8 boxes instead of 7 and arrives at the incorrect answer of 2 as a result

Increasing Non-Verbal Participation for Remote Elementary Students by Jared Carter

Mercedes Nuñez, a third-grade teacher at Central Elementary School in Hendry County met with her EQUIPD Instructional Specialist after her first day of remote teaching. While Ms. Nuñez felt that her first day with remote students this fall was effective overall, she identified two key areas to work on with her instructional specialist. First, many of her students were not responding verbally through the video conferencing software used at her school.

This compounded the difficulty of the second problem—that the

spiral review for reading and math was taking too much time. Knowing that Ms. Nuñez had used physical whiteboards for formative assessment in her classroom before, her instructional specialist suggested whiteboard.fi, a simple, free whiteboarding tool with powerful features. After following the teacher-provided link and typing their name, students are presented with individual whiteboards that they can draw or type on using a computer, tablet, or phone.

After practicing with the software, Ms. Nuñez felt comfortable using whiteboard.fi and prepared to deploy it for the spiral review the next day. An example student response is shown in **Error! Reference source not found.** By looking at the example student work, Ms. Nuñez was able to understand *how* the student arrived at an incorrect answer, in this case the student drew 8 boxes instead of 7.



A student in Mr. Stinnard's class learning to detect germs by using a blacklight

Adventures in Second Grade by Seleka Kerr

Wayne Stinnard has been a highly successful 4th grade teacher for years. He had his routine down and knew how to prepare his students for the 5th grade Science assessment. This year his skills and talents were needed in 2nd grade instead. Neither Covid-19 safety guidelines nor a new grade level altered his priorities in making connections with his students, community service and he continues to use creative ways to teach Science in the classroom.

He started the year off with goodie bags for each student that included themed masks for their

faces. To emphasize the importance of washing hands he used a blacklight on their hands to detect germs. He inspired them to read wherever they wanted in his room by using glow sticks. In remembrance of 9-11 the students wrote thank you cards to first responders from their local fire station, sheriff's office, and hospital and once they were done, the letters were hand delivered.

In weeks to come the students will be learning to use Flipgrid to create videos to discuss their books. Each student will be

required to leave one comment and one question for each of their classmates' videos.

These second graders are not the only ones developing new skills, Wayne has been selected to participate on a state team to help develop FSA questions to be included in future tests. The real winners are the students who get to call Mr. Stinnard's class their own!



Ms. Clark has created a classroom homepage, a virtual office space, and a break room for her students

Google Educator of South Florida by Krista Dulany

Over the summer, Danielle Clark has been working hard to make her mark. Educators in Palm Beach County, South Florida, and across the state have grown to know and recognize Danielle through her involvement and accomplishments in the Google Educator Group of South Florida. As a Captain, Danielle has supported educators throughout the summer to get ready for the upcoming virtual school year by hosting live webinars and trainings. Her "Designing a Bitmoji Classroom" was held live and she was joined by more than 500 of her peers. This platform allowed her to support, encourage, and inspire fellow educators to go above and beyond to create interactive, informational, and personalized

virtual classrooms so their students got to know a little bit more about them while online. Her involvement not only got the attention of her peers, she even inspired the superintendent of Palm Beach County Schools, Dr. Donald Fennoy, to join in on the fun with a Bitmoji welcome back to school message.

On the first day of school, Danielle and her Verde K-8 6th Grade World History and pre-IT students were paid a special virtual visit by Dr. Fennoy and were welcomed into the school year. She was recognized for going above and beyond the distance to get her

students and fellow teachers ready for the school year. We are proud to support growing leaders in the EQUIPD grant and cannot wait to see Danielle soar to new heights this school year. If you are interested in viewing Danielle's Bitmoji training, please find the links here: Preparing your Bitmoji https://youtu.be/pJhO17_0ucQ and Design Bitmoji Classroom <https://youtu.be/3Efpvherq6A> If you are interested in Google Educators of South Florida visit their site: <https://sites.google.com/view/gegsofla/home>

Teaching Face-To-Face, Hybrid or Full Virtually by Xavier Rozas

During these uncertain times, for students returning to school, be it for face-to-face instruction, a hybrid or fully virtually, they look to their teachers for guidance and assurance that they are safe, supported and valued contributors to the overall learning community.

In turn, teachers work tirelessly to address the unique and varied social-emotional, academic and resource needs of a student body that can no longer 'circle round', group up or share out with elbow partners, at least not in the traditional sense. Faced with these technical and adaptive challenges, St. Johns teachers have come together to share their best practices, train up on new adaptive educational technologies, and support each other as they strive to fulfill their promise as educators and leaders in the community. The EQuIPD Instructional Specialist Team has had the honor of being a contributing partner in this multi-faceted initiative to rethink how rigorous and engaging instruction can be delivered to all students

regardless of where they are sitting or how they are accessing the curriculum. For Mill Creek Academy technology teacher Tammy Bennett, this challenge was not only personal (both her children are current students), it was also an opportunity for her to bring the teaching and learning of Computer Science and Information Technology into the highly valued, but elusive realm of authentic, real-world practice and application with her students. During a recent EQuIPD coaching session she explained her approach to taking on the challenge's teachers are facing. "We are teachers, we plan and organize and practice so that we can give our best to our students, it's just what we do. But, when our well-intentioned plans and established goals do not pan out as we envisioned, we must be OK with it. We need to be able to try new things and if need be, we reassess and pivot."

In her thirteen years as a teacher in South Carolina, Duval County

and St. Johns, Tammy has learned that students thrive when they understand the practical applications of their learning as part of a larger system of interconnected skills, techniques and frameworks of understanding that work across the curriculum and can be observed and interacted with in the real-world. Key to this trusted model of instruction is student collaboration on projects that require creative problem solving, distributed task completion and most importantly working as part of a team.

During these uncertain times, for EVERYONE returning to school, be it for face-to-face instruction, a hybrid or fully virtually, look to each other for guidance and assurances; and know this- YOU ARE ALL VALUED contributors to the entire learning community.



Robotics Club competing at Vex Lego League Competition

Virtual Learning and Managing Hybrid Teaching by Krista Dulany

As the first days of school neared, EQuIPD teachers and coaches were waiting anxiously for the news about the upcoming school year. In many schools, our teachers were faced with the hybrid teaching model. Though this seemed daunting, our EQuIPD teachers charged headfirst into the challenge knowing that their coaches would be supporting them from the start.

The EQuIPD grant teachers have done an amazing job preparing for virtual learning and managing the hybrid teaching structure. One teacher, who has done an awesome job is Jennifer Mulvey from Okeechobee Freshman Campus in Okeechobee, Florida. Jennifer recently made the

move from teaching middle school English to 9th Grade Pre-AP English.

During our first coaching sessions, we began to brainstorm what the hybrid teaching model would look like from the perspective of student collaboration and connecting in-person and online students. Over multiple discussions, we landed on using Jamboard to facilitate collaboration between student groups while practicing social distancing.

The first Jamboard activity Jennifer developed for her Pre-AP English class was a vocabulary tool in the form of a word sort. Students were divided into breakout room groups and students

had to define and sort the upcoming literature reading's vocabulary. The students were given choice in how they categorized and sorted their vocab and had to provide an explanation. Jennifer has continued to develop and deploy more collaborative activities using Jamboard along with design thinking processes.

I am excited to continue working with Jennifer as her coach throughout the rest of the school year and the EQuIPD grant program. She continues to come to coaching sessions with new ideas and goals to better her teaching practices for her students. Cannot wait to see where this process brings us next.



Example of a Vocab Word Sort on Jamboard



Student working Collaboratively on Jamboard



Ms. Monroe displaying the sensors used to study weather.

Understanding the Science of Weather by Christine Angel Danger

EQuIPD teacher Shardae Monroe at Sulphur Springs K-8 has become very adept at using sensors and probeware in her 5th grade science classroom. She often helps her students to understand concepts more deeply using these tools. She is already providing her brick and mortar and virtual students with opportunities to use

sensors to learn about weather and to analyze data.

Her PASCO weather sensor is collecting weather data that is shared with both the students in her classroom and her virtual students.

Students will conduct a long-term investigation by

collecting weather data daily and looking for patterns. These patterns will be used to help them understand the science of weather and let them become "Jr. Meteorologists".

Teachers prep for Certification Exams with help from EQuIPD

Over 75% of grant intervention teachers have signed up to take State Certification Exams to add endorsements to their teacher certificate.

To help support teachers in this effort the grant has supplied study guides for exams and 3 month STUDY.COM subscriptions.

Coaches and the PI are also running weekly study sessions for the STEM certifications to additionally support teachers in earning endorsements.

EQuIPD Summer Bootcamp: Storylines, Models, and Inquiry Model Stages by Leigh Arnold

From the EQuIPD Summer bootcamp teachers learned information to structure instruction and get students excited about learning. They learned and created content storylines, models, the inquiry model stages, swim lanes, all while learning how to implement technology, analyzing data and real world examples.

Mrs. St. Hilaire at Palm Springs Community Middle School found Inquiry model stages to be extremely helpful in planning out lessons, and structure upcoming virtual lessons using that framework. She also found posting a daily agenda, as coaches did in the Bootcamp, to students will not only help her stay organized but allow for her

to plan the lesson accordingly. Mrs. St. Hilaire thoroughly enjoyed using Flipgrid and thought that it could be included into her instruction as well.

She plans on having students use their virtual online journal to show how they solved their homework problems, but also verbally they will describe on Flipgrid how they solved it.

Student Data Drives Teacher Lessons in Hendry County by Jared Carter

David Lee teaches Geometry and Algebra I at LaBelle High School in Hendry county. To increase student engagement, Mr. Lee has employed several formative assessment tools, including Formative and Google Forms.

These digital tools empower Mr. Lee in several ways. He can give

the same formative assessment to students at home or in class. He can easily (and paperless-ly) save student responses to compare with future answers. For some types of questions, he can receive instant feedback on how much of the lesson students are understanding. Students can also receive instant

feedback to see if they are on the right track or not.

Mr. Lee has been working with his EQuIPD coach to visualize student data and allow it to inform future lessons.

In just a few clicks, Mr. Lee can see the areas that his students need additional support in, and he can even group students to focus on different areas by carefully examining his data.

Professional Development, Lesson Planning and Execution by Christine Angel Danger

Evelyn De Los Santos has participated in EQuIPD for two years. During this she developed her skills in professional development, lesson planning, and execution of lessons and her student's achievement is showing her success.

Ms. De Los Santos says she now feels extremely confident in her role as a teacher. She has learned new ways to deliver academic content, while keeping the interests and needs of her students her central focus. Her students have become accustomed to actively thinking, sharing their thinking, and engaging in hands on activities.

Before becoming part of EQuIPD, Ms. De Los Santos reported that she struggled with questioning her student effectively. She did not feel confident in finding an approach or delivery for effective questioning strategies. She worked with her EQuIPD coach on developing my skills in questioning, as a result, her latest observation by her principal was very positive and reflected her growth as a teacher and development of that skill set.

Evelyn De Los Santos stated, "I feel much more accomplished as well as developed in my profession. The EQuIPD program is incredibly valuable, one of the

main reasons for this being that each teacher in the program works with a highly effective coach. My coach, Christine Danger, has helped me understand d how to effectively plan and organize my lesson while being more of a facilitator and helping my students grow in their learning. One critical area I have improved on is my questioning and assessing of students during the lesson. I now fully understand how to creatively assess students through questioning during the lesson which adds to the class discussion of the topic at hand, while keeping students engaged in the lesson."

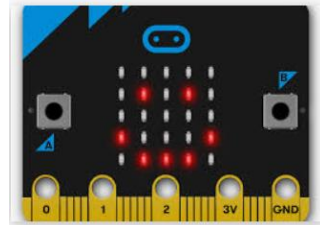


The Process of Improvement by Seleka Kerr

Karen Hart is a CTE teacher in Sarasota County Schools teaching middle school Coding to 6th - 8th graders. This is her first year teaching the course as previously she was a Science teacher. She credits her success this year with using technology in the classroom to teach core concepts and embracing things like microbits, to her participation in the EQuIPD

program and the training and coaching she has received as a result. Here are two samples of process maps written by her students in her Advanced Coding class comprised of 7th and 8th graders. She tasked them with developing a code, then creating a process map showing how to debug code and then had them write to explain why following the

steps of debugging is important. One of the key elements of the EQuIPD instructional model is eliciting student thinking to find out what they already know or think to help guide the instructional process. It is impossible to overcome student misconceptions without first knowing what the misconceptions are.



Recognition Given for Rigorous STEM Certification by Xavier Rozas

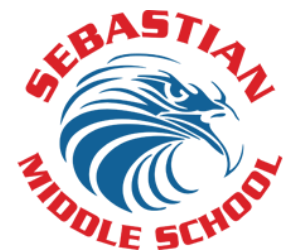
It has been a flurry of activity at the Sebastian Middle School heading into the Holiday Season. Amidst a rigorous course of study, Sebastian's faculty, staff, and administrators have been working tirelessly to brighten up students' and families' spirits with the annual Giving Tree, Spirit Week, Book Fairs, and assemblies (socially distanced, of course). Perhaps even more exciting though, Sebastian Middle School has been recognized as an exemplar in

STEM education and has been awarded a Cognia STEM School designation.

In speaking with teachers, we learned that this achievement really was a community effort. Parents, students, teachers, and business partners all had to be interviewed and the STEM instruction vetted by Cognia as part of their rigorous certification process.

Over a year in the making, Sebastian's bid for this prestigious recognition was

truly anchored by the schools' science, technology, math and STEAM teachers, two of which are EQuIPD Program intervention teachers, Mr. Bernie Huffman, computer and Ms. Emily LaVallee, math. Having just completed a robust EQuIPD professional development session promoting design thinking and project-based learning, these teachers are well prepared to continue pushing students with authentic, hands-on, and student-centered instruction that inspires.





“2021 William T. Dwyer Award for Teaching Excellence” by Leigh Arnold

“The William T. Dwyer Awards for Excellence in Education is an annual program of the Economic Council of Palm Beach County Foundation, recognizing outstanding educators from public and private schools in Palm Beach County. The program seeks to increase awareness of the exemplary teaching in our community, while supporting educators and schools with financial awards and encouraging residents to promote high standards of excellence in

education” (2021 William T. Dwyer Awards for Excellence in Education presented by Hanley Foundation).

This past year one of our EQUiPD teachers received this prestigious award in the category of STEM. Heather Magill, a STEM and Physical Science teacher at Palm Springs Community Middle, was nominated by her school, then had to go through a rigorous interview process to win this award. She continues

to work hard to include hands on learning into her instruction, even in the hybrid model of instruction. Heather has made partnerships with PBC ERM, Palm Beach County Environmental Resources Management, to hold monthly virtual field trips for any secondary science student in the district. This allows the students to connect their science content in real-world settings with actual scientists who are in the field.

University of Florida Department of Materials Science and Engineering EQuIPD Program

PO Box 116400
Gainesville, FL 32610

Phone
(352) 846-3367

Fax
(352) 260-0994

E-mail
EQuiPD@mse.ufl.edu

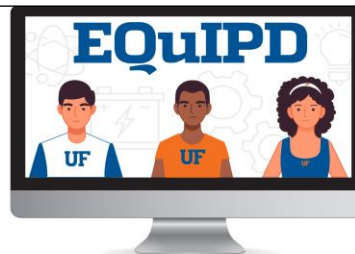
We're on the Web!

See us at:
<https://equipd.mse.ufl.edu>

EQuIPD Broader Impacts:

This summer EQuIPD Grant Coaches presented four talks at NSTA STEM Forum 2020, including talks on Inquiry, the EQuIPD Coaching Model, Use of Scratch to build concept Models, and use of Sensors and Probeware in Inquiry lessons.

EQuIPD also collaborated with Jackson State University in Mississippi and theMAST grant to provide teachers with two weeks of professional development for concept modeling and use of sensors and probes in inquiry lessons. These 45 912 STEM teachers were excited to use these practices in fall classrooms.



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