

➤ ***Dr. Streveler: Welcome to the Research Briefs Podcast.***

I'm your host Ruth Streveler coming to you from the School of Engineering Education at Purdue University.

The goal of Research Briefs is to expand the boundaries of engineering education research. In these podcasts we'll speak to researchers about new theories, new methods, and new findings in engineering education research.

My guest today on Research Briefs is Dr. James Holly, Jr.

James earned a Ph.D. in Engineering Education from Purdue in December 2018 and is now an Academic Interventionist working in Martin Luther King, Jr. Senior High School in Detroit, MI.

James' personal mission is to invest in the prosperity of black and urban youth, by helping young people develop their mental, physical, and spiritual capacities so they may become mature individuals and active members of society. With a keen awareness of the debilitating effect of systemic racism on the lives of black Americans, James advances his mission through designing educational experiences that stimulate young people's cultural growth, intellectual growth, intellectual competence, and sociopolitical consciousness.

James' dissertation, entitled: "Of The Coming of James: A Critical Autoethnography of Teaching Engineering to Black Boys as a Black Man"

is very aligned with his personal mission.

Today, we've asked James to discuss his dissertation, and his use of critical autoethnography.

James, welcome to Research Briefs!

❖ **Dr. Holly:** Thank you, Ruth. I am sincerely honored to participate as a guest on your podcast and I am very excited about our conversation.

➤ *Thank you. I should tell the viewers I did get to see you graduate a few weeks ago and so it's exciting to see you again even over Zoom.*

To provide a bit of a brief introduction to listeners, can you tell us about your pathway into engineering education research?

❖ **Yes, I can.** *So, I am originally from Detroit, Michigan. I graduated from a high school called University of Detroit Jesuit High School. And, my high school graduating GPA was 2.69 and I also mention that because statistically I should not have gotten as far as I did. Being a black male, statistics are not in my favor, and then coming out of Detroit, our educational system, but in particular, graduating from high school with a 2.69 GPA your not generally seen as being on the college track.*

And so, I did my bachelor's degree at Tuskegee University, in Tuskegee, Alabama and studied mechanical engineering, not necessarily out of a deep interest in engineering, more so out of a liking of math and science and I did

okay. I can't say I did too well with a 2.69, but I did okay. And, math's the way that I was encouraged to pursue and the problem solving really spoke to me. And, during that journey one of my professors, Dr. Maria Calhoun, mentioned to me, I think it was my junior year, I first met her as a TA and then she became a professor, and my second year class she said, "You're going to get a Ph.D. someday." And, at the time I had not heard of a Ph.D., I wasn't familiar, and so I respectfully said, "Thank you, I appreciate that, but I don't really know what you're talking about. But I deeply appreciate your confidence in my capabilities."

And, so when I became a senior and now it's time getting into the end of my undergraduate career I went back to her and I said, "Okay, you said something about a Ph.D., I'm not sure what that is. Is there like an intermediate step?" She mentioned a master's program and I said, "Well, let me try a master's because that would give me more specialized skills in engineering, and I would be more focused. And, at the time I wasn't really convinced that I wanted to become an engineer as a profession; I had a deep interest in youth development and extracurricular opportunities."

And so, we agreed on that and she helped me learn about the process and helping me to find recommendations. And then I went to Michigan State and I studied mechanical engineering and then that's when I was certain that I was not going to become an engineer. My interest in math completely stopped when it became letters, and these proofs, and all of this; I didn't want to prove anything. And so, I was like this is not it.

I struggled, but I made it through there but along the process I had a

colleague who told me about Purdue's engineering education program, and she spoke about it, which is ironic because through her I learned about it and that's how I ended up going and successfully completed the program. But she later did not want to go even though she was the one who initially told me. And so, that was very interesting.

But, I saw it as an opportunity to merge my engineering training that I had decided I really didn't want to further with what I felt was my calling to serve youth, particularly black urban youth. And, I wanted to focus on the K-12 engineering education and using that as a way to kind of engage youth through engineering, but primarily focused on youth development. And so, that's how I came to pursue engineering education at Purdue.

➤ *So, clearly there's something about engineering itself, the mind-set, that you find really valuable and want to pass on. Can you just say a little bit about that, even though you say you're clear you don't want to be "an engineer", but obviously there's something about engineering that's appealing to you?*

❖ *Yes. And that thinking part is what captured me. Engineering has a way of developing, in some ways like it doesn't really transcend everywhere, but particularly in the context of engineering you have to be a critical thinker, you have to take what some people have called "wicked problems," unclear problems with unclear solutions, and use what you do know to find out what is unknown. And, you know, a lot of times there's not a clear answer or a "right" answer, but there's an optimal answer like, "This solution will get you a certain result, and this solution will get you a certain result. Which*

one is better for your ultimate end or desired end goal?” And that is what intrigued me. And, as I relate to youth, I wanted to translate that to their social circumstance, particularly in black youth in an urban context. They have to navigate racist structures, they have to navigate a lack of resources, and lot of how they think about themselves and what they’re capable of. A lot of times it’s limited and restrained and so they have to think outside of what they haven’t even seen, because a lot of times they don’t see people who have gone to do a Ph.D., or been successful in particular ways. And so, I felt like I did fit very well with engineering and I wanted to kind of train students to think in that critical way in a social context. So, not necessarily in dealing with dynamics, or stress, in terms of how it relates mechanically; but stress socially, stress psychologically, how do you use those engineering thinking principles to create an optimal solution as it relates to their lives?

➤ *So, in Research Briefs, we talk a lot to folks who’ve used new and exciting methods. And so, one of the things that I wanted to talk a bit about was critical autoethnography which was the method you used for your dissertation. So, could you start, for people that haven’t maybe heard of critical autoethnography before and give us a really quick summary of what that is?*

- ❖ **Yes. So, autoethnography, the definition I like, is a systematic analysis of one’s personal experiences within a particular culture, community, or context. And so, the idea is to do more than just talk about your story or personal narrative, but you’re seeking the sociological understanding given some particular cultural context.**

And then, the critical part, in my dissertation I like to say, “the critical is critical,” I didn’t just throw that in there to make it sound fancy. But, the critical aspect, critical ethnography uses this data to analyze how structures of power, inherent in culture, informs some aspect of her or his own story. And so, for me my cultural context, was being black and also being a black man. So how does society’s power dynamics, as it relates to me being a black male, play out in how I learned engineering as well as how I taught it.

➤ *So, because I know you a bit, I know that you didn’t really start out using this idea. So, can you tell the listeners a bit about kind of the journey to using autoethnography versus more traditional methods?*

❖ **Yes. So, it was definitely a journey, a lot of different changes. One thing that was consistent was that when I came in, I knew I wanted to focus on researching black youth in an urban context like Detroit. But, along time that narrowed down to black boys. And so, a lot of the time was just figuring out what was the best method to kind of understand their experiences in a different way, and do this type of course, the thing I wanted to do.**

And so, early on I learned about research methods and ethnography and case studies really intrigued me. I wanted to sort of facilitate a course and then interview the participants about their experience. And, you know, ethnography seemed like it would be able to do that, but more in particular a case study seemed like if I created this experience and out of that case how would it impact them studying that case? And so, the course was designed, in your class, right? That really helped me out taking your class,

and the course that I designed was for black males. But, as I learned more about black males, from a research and scholarly perspective I should say because I had my own experience and I have a lot of black male friends, but studying them, or I should say “us,” from a research and scholarly perspective helped me see it in more broad and generalized perspectives and I noticed a correlation between our public school experiences and our civic experiences. And when I say, “civic,” I mean how we live outside of the classroom just in general life as a citizen.

And the consistency or the correlation was failure. So, it was failure on the part of the institutions that are supposed to service us. They did not do that when they did not prepare us to be successful in either of those contexts. And so there were things like being racially profiled, disparities in punishment, in school that looked like school suspensions. Outside the school context that was like jail and prison sentencing, things that black males did that white males or other males did, the action would be the same, but the sentence would be different; and then just a high number of arrests in general.

And so, regardless of how black males did in school, we still had to navigate society as citizens. And so, I felt like this civic dynamic was even more important, though correlated I felt like it was more important than even what was going on in the schools. And that really shifted my research focus a lot.

And so, I wanted the teaching experience and the research experience to be empowering for their in-school and out-of-school experiences. And so, I

began to move on from case studies to see how can I do something more impactful, more broader to have a bigger impact? And so, I started to talk with your first podcast guest, Dr. Alice Pauley. We began having conversations and that was very helpful. She began to ask questions to bring out my thoughts and kind of help me narrow and really see that case study in general wasn't it, but I didn't really know what was next. But she just asked questions, and had conversations, and gave me resources.

And so, eventually she told me about PAR, which is Participatory Action Research, and there's a version of that, YPAR, Youth Participatory Action Research. And what that does is you work with youth to build some research project. And, so you train the students in the research methods and then they come up with the topic they want to study in this civically infused, empowering, critical thinking experience.

And about three years into the program I thought that was going to be it. I thought that was the methodology and I was moving forward with that, reading more literature. But the problem was I still had in my mind what I wanted to teach and what I wanted the outcomes to look like. And not necessarily what I wanted them to gain or how I wanted them to experience it, but more so what I wanted to infuse or instill in the students. Whereas, YPAR was much more open and student-led. And so, I didn't want to give a superficial representation of empowerment and act as if I was empowering the students but taking away their choice. And so, that didn't really settle completely because I had a lot in mind already.

And so, during one of my research group meetings, a colleague of mine, now

Dr. Avneet Hira, suggested autoethnography, and it was kind of a random, not fully serious, but like, “Just check this out. Did you ever think about that?” And, the weird part is it kind of circled back to where I started in looking at ethnography; it wasn’t autoethnography originally, but it kind of brought me back to that space whatever was there. And, as I began to look more into it it made sense. And so, I am forever grateful for that recommendation.

And there were even some points where people asked, “What about action research? Why didn’t you consider that?” And for me, as far as looking at the key questions and things that made the distinctions, action research is focused on studying one’s practice. Like you make a plan, you take action, you observe and reflect, and making changes to your teaching practice. Whereas, autoethnography was focused more on gaining knowledge about how one’s identity impacts and is impacted by one’s practice. And so, that to me was the core. Like working with black males specifically, we have this core similar identity dynamic that gives us a capital in the similar experiences.

I wanted to explore how my identity connecting with them impacts how they understand engineering and just go about their lives.

Autoethnography also places the research as a source of data and that also correlated with my theoretical framework, Black Critical Race Theory or BlackCrit, which is a sub-group of critical race theory that really emphasizes storytelling and telling personal narratives. And so, when those two jelled well and that is how I landed on Critical Autoethnography.

➤ *So, I guess I'll put on my professor hat for a moment and just I want to point out how useful it was that you stayed open to thinking about what really is your research question, what is the framework you want to use, and what method is going to provide the answers you want. And that you were really diligent in finding what worked best. So, hat's off to you for that!*

❖ **Thank you.**

➤ *And I would recommend that people read your dissertation; it's really very, very well done.*

❖ **Thank you**

➤ *So, when one starts to include oneself in part of the data collection, or really be part of the data collection, I know there are challenges that come up with that. So, could you say a bit about some of the challenges you encountered once you decided on autoethnography?*

❖ **Yes. Another thing, really quickly, that helped me feel comfortable or choose autoethnography was, I felt it would give me opportunities to challenge traditional ways of doing research. And, in general, like the broad fields of research, but in particular how black males are analyzed. I read a lot about Deficit Narratives and how much research there is. I think black males are one of the most overly researched people groups, but yet, nothing changes in how they're served or engaged. And so, I wanted to challenge that way of looking at black males; but I also wanted to give a perspective**

that was more complex. And so, me being a human being, that gave me the space to be complex in the way that I did my research.

And so, one of the challenges was really trying to get whatever is in my head on paper; trying to figure out how do I help people actually know and see what I'm thinking in an authentic way? And so, the way I chose to collect data was very critical. One of the methods was interviews; and so, I chose a scholar who has expertise in the interviewing and is familiar with Critical Race Theory. And so, she was able to ask questions that really brought out my thinking process and forced me to elaborate on certain decision that I can identify that's different from other people.

For example, if I'm in a classroom with another white male and we're teaching the definition of engineering. That teacher may define it one way; I may define it another way. That's the obvious difference. But, when the students respond to that definition and how they tend to use it, what then do I decide to do after that, or how do I come back later that day, or how does the other teacher respond to the student's response to their definition? Those are the things that I may not know are different; I may not know that the way I interact with students is kind of non-traditional.

And so I needed someone outside of myself who could identify the ways of interacting with the students that may be different, the ways not only in language but even in posture, the arrangement of the classroom, and those type of dynamics.

Also, journaling and trying to figure out the proper questions to ask within

the journal so that again I'm not already thinking about what answers I want to get out but I'm actually being in the moment and being present not focused on the end-goal of the research outcomes and what I want people to understand and know, but being present. That was difficult.

Another challenge during the writing process, both the journaling and the final writing, was to figure out what my target audience is. And knowing that, particularly black males or black youth, are in an educational context where their teachers are of a different race and gender. Generally most black males are taught by white women and that causes a lot of issues with the cultural gaps that exist.

And initially I was like, "I'm writing this for white female teachers, or white teachers in general." But that did not allow me to really be authentic because I was talking and writing as if it was for them, as opposed to telling my own story in the way that I wanted to tell it. And allowing other people to glean what they can and hopefully they get it, but also realizing that I need to talk to black teachers as well, male or female. And so, that was one of the challenges in my mind is like focus on telling my story because so much of research is about separating yourself. The way that I was trained in research in academia is separating yourself, being an objective researcher; and that's just not realistic. And so, I had to work towards freeing, or emancipating, my mind to actually tell my own story the way I wanted to tell it.

➤ *As you probably know, or as I've told you before, I'm interested in using autoethnography myself. And, one of the things that I surprisingly found*

was exactly what your talking about of this idea of, “Oh, now I’m researching myself.” And that totally throws over any idea of being objective. And, just seeing how much I resisted that even though I thought I wouldn’t resist that, I thought I was over that, but it’s so ingrained in us that when we’re a researcher we’re objective and we’re interviewing other people and we’re collecting data from other people; not we are being interviewed and using our own interview as a source of data for us. So, again, you’re very courageous to do that.

Have you had challenges with other people’s thinking about your dissertation? Or, how has your work been received?

- ❖ **Well, this may be funny but the biggest person who I’ve had, the main person I’ve had this conversation with, not really a problem I guess, but having the same issue of, “Is this objective, is this research?” is my pastor, actually. And I talked with him and he’s like, “But what are you researching?” He struggled a lot with that idea of myself being the data. But mostly the reactions have been positive and encouraging.**

But, the way I think about it is as an educator we have to recognize that the way we pass on and transmit information it comes through us first to the next person and we are cultural beings; we are active beings. And so, how you transmit information, Ruth, is going to be different based on your experiences, your beliefs, the way you see the world, your value systems. And so, putting ourselves into the research experience is just allowing us to be honest about how we’re shaping and coloring that information that’s being transmitted. The information is still being the same, but we infuse it

in a particular way.

Now, what I also encourage is the fact of using my cultural background, and my racial identity, and my life experiences as a scaffold. This is not just showing black faces to the students so they can say, “I’ve seen a black engineer; I’m empowered.” But it’s more so helping them connect with the information so that they could see that it’s relevant in their context and the way that they think.

And so, for me I really enjoy culturally relevant pedagogy and that’s about using culture as a scaffold to increase cognitive process in the information, not necessarily to make someone just feel better or feel excited. Though that can be a byproduct. And so, by me being honest about the way that I impacted their experience, I was able to extract those particular ways that scaffolded the students’ understanding. Or, at least how I intended to scaffold their understanding, how I intended to shape the classroom experience in a way that made sense to them and how they think and understand things, at least how I anticipated they thought and understood things in ways that other people may not.

➤ *So, I would like to end with the question that I always end with which is, if other people are thinking about trying a new method or creating a new framework, what advice would you have for them given your experience with doing this for your dissertation.*

- ❖ **DO IT. Do it.** I mean I was told that the Ph.D. process is about creating, generating new knowledge and new ideas in new ways. And, though I have

certain thoughts about that now, that's what I was told it was about. And so, I was certainly encouraged to expand those boundaries and push against them.

Along the way of my own journey I had many people tell me, this is a popular saying, "The best dissertation is a finished dissertation," and I disagree. I don't really know what the best dissertation is, but just because it's finished doesn't mean that it's a good, or high quality, or what the field or society needs. And so, I think what we need to do is to push those boundaries and don't settle when approaching whether it may be uncharted or lightly trodden territory. Find people that will encourage you and help you through the complex challenges that arise as you push through your journey.

And, the time that we spend to overcome what doesn't really make sense, or seem clear to us, will eventually enrich our work. So, I'm thankful for the positive feedback now, but when I was in the middle of the weeds, there were times when I was like, "Well, I could take this shortcut and just get this out to get it done and then work on it later when it's all published. I just want to graduate." And now I'm thankful that I didn't just do it, just get through it, just try to finish but I spent long hours and days asking myself questions, trying to figure things out. Doing drafts over and over of research questions and journal questions.

And, I think that ultimately, we need transformative research and that's not easy. So, do it. Find a good support group. And, hopefully it turns out well

for you.

➤ *Well, again your dissertation is really a powerful document and I hope it's a book someday.*

❖ **We'll see about that.**

➤ *We'll see about that, yes. But I think it's worth it.*

❖ **Stay tuned.**

➤ *Yes, yes.*

Well, James, thank you so much for being with us today. It's always a pleasure to talk with you. Your story and your tenacity and your courage inspires me, and I hope it will inspire others as well.

❖ **Well you're welcome. For all of that I appreciate it and thank you for having me.**

➤ *Well, you're very, very welcome.*

Research Briefs is produced by the School of Engineering Education at Purdue.

- *Thank you to Patrick Vogt for composing our theme music. The transcript of this podcast can be found by Googling “Purdue Engineering Education Podcast.” And please check out my blog, RuthStreveler.Wordpress.com.*