- ***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 Huff.

  James is an Assistant Professor of Engineering Education at Harding University and teaches courses in design. In the context of his research lab, which is called Beyond Professional Identity (BPI), James mentors undergraduate students, doctoral students, and academic professionals in using interpretative phenomenological analysis (IPA) as a qualitative research method. His investigations are centered on unpacking the individual lived experiences of identity in professional contexts, and he is currently a PI for an NSF-funded study on shame in the context of engineering, which I am hoping he'll talk about a bit today.

  Those of you who are regular listeners to Research Briefs may remember that James was also a guest on Episode 7 which was the ASEE live interviews with ENE alumni, and at that time we said, "Tell us a little bit about IPA, and come back and we'll have a whole podcast on it. And,

that's what we're doing today.

So, James, welcome to Research Briefs, I'm so pleased you're here.

- **Dr. Huff: Thank you for having me, I'm very pleased to be here. I'm a big fan of the show myself.**

  - ***Well, thank you. I'm a big fan of you. So, we can be fans together here.***

- **Well thank you.**

  - ***To provide a bit of introduction to listeners can you tell us a little bit about how you got into engineering education research?***

- **Sure. I had, like many who are on your show, I had begun my projectory in an engineering discipline; I was in electrical and computer engineering, graduated with a bachelor's in computer engineering at Harding, the place I'm at now. And pursued my master's in electrical and computer engineering at Purdue.**

  I was a member of the Robot Vision Lab and while I was doing my master's I worked for a human simulation software company as well. So, a lot of my interests were in this space of artificial intelligence. I mention that because even from the very beginning of my projectory, I had this fascination and drive to understand how individuals think, how they behave, and what motivates them. And that was even carrying through in a lot of my

electrical and computer engineering work at the master's level and in my job at a human simulation software company. And those were the things I would get very excited about.

I was not very excited about coding although many are, and I'm very enthusiastic that they are excited about it, that just didn't characterize me. As I was completing my master's I took an academic position as an instructor at Harding University in teaching and lecturing and engineering coursework. That position was taken with the understanding that I would take an academic sabbatical and pursue a Ph.D., and as I was kind of thinking of what I wanted to study I became very fascinated with the problems that I was living in rather than the problems that were contained within a computer engineering discipline. And that is the students' experiences in the courses, how they understood who they were in the context of becoming engineers. And that was really my pathway into pursuing a Ph.D. at Purdue in engineering education research.

What initially motivated me was this idea of how individuals in this professional context live out their holistic sense of identity. I didn't even quite have that language, but at the very beginning where I saw that is in something that is a passion of mine even today, and that's a big part of my teaching profile is in service learning, and engineers living out their profession in community service. And that was very appealing to me.

I came to Purdue and worked, very gratefully, for three years with the EPICS (Engineering Projects in Community Service) program. But that was the

launch of getting at something deeper than the context that I was interested in, and that is, "Who are these individuals?" I came to have the language of "identity," and how do I study this, how do I understand who these individuals are. And that's really how I got into and launched my research career in engineering education research.

- ***So, what we've specifically asked you to speak about is the method that I so love, Interpretative Phenomenological Analysis (IPA). So, how did you begin using IPA? Can you first of all tell us what that is?***

❖ **Absolutely. Yes, so Interpretative Phenomenological Analysis is what we will refer to from this point forward as IPA, that is a research method, and really, I would say a research mindset undergirding the procedures that is concerned, as Jonathan Smith, the founder of IPA, would say is concerned with the detailed examination of personal lived experience. How individuals make sense of that experience; how they create meaning of those experiences. It's anchored in this idea that there's a view of a person as someone who is embedded and connected to the world around them through forms of language, through broader contexts. And in their everyday lived experience there's some rich patterns that bear significance to understanding.**

And so, IPA is a qualitative research methodology located in a psychological tradition to really unpack what those experiences are and how those individual experiences integrate, challenge, and mesh with broader

theoretical ways of framing those experiences.

- ***So, I notice you've used the word, "individual" a lot. Why are you pointing that out particularly and emphasizing that?***

❖ **That's good question. That's an excellent question. So, I do that for two reasons. One is just in general with education research, we're often oriented to understand events that are really collectively understood that live in sort of this sociocultural space that's kind of out there beyond a person. And a lot of times that's really what we're oriented to understand in the context of education research.**

So, in my work I make a distinction that I am unabashedly looking at the personal lived experience of individuals and that is the focal point of my analysis. Not necessarily their perspective of a thing, a teaching intervention, a project, a broader experience of inclusion, I'm looking at them convictedly. And so, that's a big reason why I emphasize individual.

And you might notice that that could be in contrast to what is often investigated in phenomenological studies. So, by saying, "interpretative phenomenological analysis," we're distinguishing between a more descriptive version of phenomenology that is concerned with looking . . . really, there's a lot of similarities and a lot of alignment in that all phenomenology is really valuing the lived world, often called, "the life-world," of an individual person. Where descriptive phenomenology has aims that are distinct is they're looking at something beneath the surface, so

to speak, it's called the eidetic structure that is really the constituent parts of that experience, not necessarily connected to a person.

In interpretative phenomenological analysis, in IPA, what we are really oriented to do is see how that experience is connected to that person in their relationship with something about the world around them. Now that sounds very philosophical and it's because the method itself is very much grounded in philosophical understandings of phenomenology through people like Edwin Husserl and Martin Heidegger. And IPA is really oriented around the understandings of people like Heidegger and Sartre that unpack phenomenology as things that are very much idiosyncratic to the individual's of experience.

If that sounds daunting . . .

- ***Um-hum, it does, yes.***

❖ **And I think it does, I mean I think it does especially to people who are starting out with a research method and a way of understanding research. I will say one of the things that surprised me when I was very first getting into IPA is that philosophers were not social researchers. And so, in some ways, everything we're doing is we're kind of taking a view that has philosophical foundations and letting that breathe and live in ways of doing inquiry, ways of asking questions, and framing investigations that do sit in kind of traditional disciplinary worlds of theoretical development, journal publications, and research grants, and research projects. And so that's**

really adopting that mindset in the way I think of questions. Do I understand a person as an individual who's embedded in some salient part of the world around them, and how am I asking questions into that relationship?

As we continue to talk, I can give some examples of that, but that's really the foundation.

- ***So, one thing I'm seeing you as, here you are this computer science guy, coming into engineering education and then beginning to use something that does have these philosophical roots. And I think we would not expect a computer science guy to gravitate that way; that's just our stereotype of computer science people.***

  So, could you tell us a bit, I think it's going to be a really interesting story, of how did you come to use IPA?

❖ **Absolutely. So, first, I probably make a nuanced distinction that I came from the computer engineering pathway, which to the tribe of computer engineers is….**

❖ **I felt the scorn of my tribe of computer engineers if I didn't make that correction. But, that's a really excellent question. And I think, on some level, I was given a lot of assets by foundations in computer, and then later in computer and electrical engineering, to think of things as a complex system and to be comfortable with complexity. And to just accept that**

things are complex, how do I live in that complexity, and how do I do research in that complexity?

How I came to really understand IPA was, as I mentioned, I was very oriented to understand this broader question of identity. How do people live in their identities in the context of engineering, engineering education programs, and then later engineering careers? And I was drawn to understand that question and I had this kind of latent mindset that was already in this space of IPA. I was viewing identity as something that was very important in ways that were particular to people, to individual people.

And I noticed that in the identity literature the ways we were talking about identity was either to make sociocultural criticisms of what we expect engineers to be, or we were talking about identity with this underlying goal of wanting people to become engineers and wanting there to be more engineers. So that there could be more engineers or so that there could be diverse engineers all in the interest, but everything was really oriented around the profession itself. And I thought that at the time that I began this research, there was very little oriented around the actual people living out their very selves in the context of engineering.

So, I came to learn about IPA initially through a qualitative research class, that's where I got socialized to phenomenology, and then I learned in that qualitative research class a professor was a proponent of interpretive ways of doing phenomenological work, not necessarily in IPA. He really related to the nursing tradition which came along at the same time as IPA in the

psychological world. But that got me into the literature and got me into understanding this is a method that is very palatable to me as I read the fundamental text by Jonathan Smith, Paul Flowers, and Michael Larkin, "Interpretative Phenomenological Analysis: Theory, Method and Research." As I read that I said, "This is me, this is where I fit." So, once I understood that, that really gave me a methodological tool to dive into identity. And I would say that I was at a place that encouraged that exploration. My advisors, Drs. Bill Oakes and Brent Jesiek, were very excellent in encouraging that exploration at the time in my early part of my doctoral studies.

- ***And you actually had a chance to work with Jonathan Smith, correct?***

❖ **Yes, yes, absolutely. So, in part of that encouragement of exploration, Bill, my advisor, once I had passed my proposal he said, "This is great, you need to find a mentor." And I looked around and I didn't see a mentor. And so, I emailed some local people; I broadened that out to like a tri-state area. And then I was having the common phenomenon that many people experience when communicating with academic people of getting no response. And finally, I found someone who would respond, and he said, "I can't really support this, but you should just email Jonathan Smith himself." And to me emailing a lead author and originator of a method sounded incredibly daunting but in spite of my insecurity I did reach out to him and he, to my surprise, although it wouldn't be a surprise now that I've been in academia longer, but to my surprise at that time he replied and he connected and engaged with the work. From his perspective this had really been done**

often in health psychology domains and other forms of applied psychology, but asking the questions around professional identity was something he saw as a novel but grounded way of using the method.

So, I engaged in a mentoring relationship with him and I very much am indebted to him in mentoring me through this method which included lots of virtual time but also some intensive time at Birkbeck College where his appointment is in London as well.

- ***You went there for a couple of weeks?***

❖ **Yes. I went there for two very intense weeks that were couched before and after with lots of virtual meeting. But I will say that that in person experience was very, very critical to my internalizing and adopting the IPA mindset.**

- ***That's fabulous. I know that feeling of approaching a legend and how incredibly scary it is to do it. But yes, if they say, "Yes," it's pretty amazing.***

❖ **Yes, absolutely.**

- ***So, you and some of your fellow IPA researchers have actually gotten together to write about the tensions between the cultural practices of IPA and those in engineering education research. Can you tell us a bit***

about how you've managed that and what the tensions are?

- **Yes. So, I'm very indebted to Adam Kirn, a fellow IPA researcher in engineering education, and his leadership of pulling this article, which is now available in the journal, *Qualitative Research in Psychology.***

  That was an interesting process. We engaged in a collaborative inquiry where we asked critical questions among ourselves and documented this through a multi-month and really a multi-year process.

  The way those tensions manifest, I've kind of alluded to one of them, there is a sense of an orientation to things that live in the 'out there' space in education research generally, but I would say that's very true in the engineering education research as well. So, doing research within individual experience, I might not be oriented to particularly develop an intervention that would keep people in engineering. I may be more oriented to just care about the individual themselves and their experience in the program. And so, I might be motivated more towards psychological health and wellbeing. Those are things that are not really well explored; it's emerging but it's not really well explored in our community. We tend to focus on the health of the profession. So, that's kind of one contrast is IPA is fairly indifferent to the health of the context, even if I myself, as an IPA researcher in this context, do care. When I'm applying the method, I very much set that aside.

  And I would say that IPA really does well in making, what we call "idiographic claims," and that are claims that develop knowledge with great

sensitivity to the particular spaces where that knowledge lives. So, for example, in my study on shame in the context of engineering, we are very oriented to understand the very complex patterns that individuals experience shame in the context of being an engineering student. In doing that we're not going to find a magic answer that seeks to eradicate shame, and on the contrary we're just acknowledging that those experiences exist and it benefits us to really understand the patterns in which people live in those experiences.

Just one example is that through IPA we can kind of tease out complex findings in that when people experience shame, and this is a finding that is in our research, they do respond to those in maladaptive ways that do perpetuate the shame and cast it out to others, and can contribute to creating cultures that are unwelcoming and are alienating. And yet, these same individuals, apply adaptive strategies and reparative strategies in which they do recover from the shame and bring health into the space. IPA brings out tension and in a very productive research community there can kind of be some innate resistance to that tension where there's a sense of, "Just tell me what I need to do. What do I need to do in my classroom, how I can have maximum impact." And I would really say that's kind of the third pattern is a tension between IPA research and the cultural practices in engineering education.

Engineering education practices as I've experienced them is that IPA is really well suited to develop quiet and robust claims not claims that you shout from the mountaintops. And I think that I've been really trained in two of

those worlds where I do want to have transformative solutions that lead to interventions that I can shout from the mountaintops. And in my IPA understanding I am oriented to just let the claims be where they are and let the theory grow and guide us into informed ways and long-term ways.

So, in that sense I think there's tension. I will qualify that we, as the author team who wrote that paper, don't see those tensions as bad but we see them as very fruitful and that we wanted them to continue to be there because that challenges us to grow. Myself as an IPA researcher, I think I'm a better IPA researcher from being located in this research culture of engineering education than I would be if a lot of that was unchallenged by the community around me. And I would say for those who align more with the discipline-based education research orientation that IPA challenges them in how they carry out their investigations. So, we see that as very fruitful and that challenging as something that's welcome. And like in the shame study we're not seeking to eradicate something because it's negative but we're trying to understand things on their own terms.

- ***So, you're seeing those tensions as opportunities to grow and be enriched versus a challenge to be overcome, right?***

- **Right. Parker Palmer talks about living in the tension and not rushing to resolve the tension and that's really the way in which I see this is let's be stretched and grow, but let's not rush to resolve everything because there is going to be a tradeoff if we try to conform one methodological tradition to a**

cultural practice of a discipline or vice versa.

- ***And because you're looking at the individual, the individual is not always going to be able to be molded into something generalizable that seems to be from kind of a STEM tradition offer in that one really is obsessed with generalizability.***

- **I would say it's a way of broadening the understanding of generalizability maybe. So, instead of thinking breadth of applicability, *breadth* as in broad, not breathe as in inhaling and exhaling, but instead of thinking of generalizability as here is a deduction we're going to make, is it broadly applicable we're asking the question, "What is?" and diving deep and gaining contextual insight. And so, we're still oriented through generalizability but that's more true a conversation of the individual and personal experience that is located within the study such as an individual experience of shame, individual experiences of identity and carefully framing those in conversation with broader theoretical ways of understanding the same experience.**

  I have a recent publication in *Emerging Adulthood* that teases this out in the identity of students who go into the workplace to where they have a sense of noticeable and stark identity commitment in ways that they perceive themselves to be more developed in their adulthood trajectory than others in relation to their profession as engineers. But in relation to non-professional domains they take this more exploratory posture of saying, "What am I? Who am I? I've not really had the chance to think about this

because my education kept me very located and focused on this commitment to being an engineer." And IPA helps us bring out tense and complex findings that say, "Yes, both and are happening," and if we want to support individuals in engineering professions, we need to understand that things are happening beyond their professional identities.

- ***That's fascinating. So, James I always ask people to end answering this question: What advice would you have for people who'd like to explore new approaches in their research?***

❖ **Sure. That's a wonderful question. I think the first piece of advice that I would offer is to, especially and I'm really talking to people at the beginning of their academic career and the Ph.D. or graduate student space here, really seek to develop yourself as an owner of the method, as someone who has a deep understanding on why they're doing what they're doing rather than just using it.**

I will say being an early career faculty in my fifth year as an assistant professor, that career does not really allow the bandwidth for that rich intellectual exploration that a Ph.D. degree does. So, I would very much encourage Ph.D. students, in particular, to take ownership of the things they do rather than seeing themselves as people who apply things of something that is out there beyond them. That would really be the first big piece of advice.

And I think I learned through my reaching out to Jonathan, in my journey to

really be trained in IPA research, first I think training *is* important and that's really a part of my ongoing career as I train people in IPA but I think that reaching out is very, very key in forming those relationships. And I would say be courageous to reach out to individuals who might have something to kind of help you in your growth. But I would also say to recognize that you're also an individual in this space and what you're looking is to form a relationship where you're not a benefactor, you're in a conversation and you're in growth with them. And so, I would very much encourage being open and seeking deeper conversation and pushing yourself into domains that are not familiar, even if that means reaching out to, as you said earlier, the "legends." I think that's really a key part because people are in this from a place of passion and the worst that can happen is a response of, "No." And that's the same outcome as if nothing is going into forging the relationship in the first place.

- ***Right, right. Well, James, thank you so much for being with us today. You always are wonderful to speak to and you inspire me to keep expanding my own boundaries and I hope that you inspire others to do that as well.***

❖ **Well thank you. And thank you for having me and I really appreciate getting the chance to talk today.**

- ***You are 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.***