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On meaningfulness and performativity in engineering education methods practices: The ”honest” methods section

Dr. Stephen Secules, Florida International University

Dr. Stephen Secules is an Assistant Professor in the School of Universal Computing, Construction, and Engineering Education at Florida International University. Secules holds a joint appointment in the STEM Transformation Institute and a secondary appointment in the Department of Mechanical and Materials Engineering. He has bachelor degrees in engineering from Dartmouth College, a master's in Architectural Acoustics from Rensselaer Polytechnic Institute, and a PhD in Education (Curriculum and Instruction) from the University of Maryland. Prior to his academic career, Stephen was an acoustical consultant for 5 years. His education research has focused on culture and equity in engineering education, particularly undergraduate contexts, pedagogy, and student support. Through his work he aims to use critical qualitative, video-based, participatory, and ethnographic methods to look at everyday educational settings in engineering and shift them towards equity and inclusion. He also leads the Equity Research Group where he mentors graduate and undergraduate students in pursuing critical and action-oriented research.

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1. Introduction: On Meaningfulness and Performativity in Research Methods Writing

The engineering education community has been participating in a collective discourse about the research we do, what counts as appropriate rigor or quality, what forms or discussions indicate an attention to that level of quality. But, what is our level of meaningful engagement with that discourse? When is an author doing lip service to the idea of rigorous data collection and quality analysis? How can we help attune those learning about methods to focus on the most meaningful aspects of their work and the representation of it to others?

By *meaningfulness*, I mean the scholar genuinely engages with the realities of the research endeavor, which include: production of new knowledge; engagement with human participants; positional, epistemological, and ontological complexities; analysis of complex social dynamics; and/or communication of that process to others[1]. By p*erformativity*, I typically mean writing towards the expected topics of a research paper but with filler content that does not reckon with these deeper realities. This sort of methods section has certain trademarks—perfunctory, cookie cutter writing that looks the same in every paper, follows rules without thinking about whether they apply, and reveals details that are normatively assumed while not surfacing key aspects of the research process that cannot be assumed. Perhaps "performativity" overstates the intentionality of these practices; I'm not suggesting individuals are deceptive, and I recognize this perceived performativity could stem from training, traditions, epistemologies, methodologies, time constraints, publication limitations, review processes, or pressures to produce. Without knowing the intentions of each respective research writer, I will merely refer to the writing certain kinds of output as performing quality research methods, and others as meaningful engagement.

This methods paper presents a critical reflection and advice on meaningfulness and performativity in research methods writing, and, consistent with ERM division's Call for Papers it aims to contribute to a deeper understanding of the writing of methods in engineering education research. Although I will need to break a few rules of the typical empirical or methods innovation papers in order to prompt reflection about methods, I hope the reader will allow me that irony and join me in the reflection. The paper will progress by: 1) situating within our community's methodological discourse, 2) situating within my author perspective and positionality, 3) introducing the paper process, 4) presenting findings examples and consequences for meaningfulness and performativity across aspects of research papers, and 5) discussion and recommendations for how to orient towards meaningful research methods representations.

2. Methodological Discourses and Their Enactments

Engineering education is a heterogenous community with multiple norms and epistemological roots spanning engineering practice, engineering pedagogy, education research, the social sciences, and more. Nevertheless, engineering education has increasingly oriented around research as a defining focus of the discipline [1], [2]. In the process, many scholarly leaders and thinkers have weighed in on and tried to guide our collective approach to engineering education

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[1] This is not to suggest every paper must comprehensively engage with all of these aspects and more. It is simply noting the wide range of messy conceptual and social terrains that social science research undertakes.

research. The terms embedded in the engineering education methodological discourse reveal our shifting focus [3]. The rigor and rigorous research movements emphasized the movement from a practice-oriented discipline to a research-oriented discipline that could define itself by adherence to rigorous research methods [4], [5]. This discourse coincided with the origin of engineering education PhD programs that could train scholars in these research methods. The critique of rigor [6] and the quality discourse [7], [8] often emphasized that this prior movement had had an effect of narrowing the acceptable forms of methodology towards a quantitative bias. Subsequently, methodological diversity and epistemological pluralism was emphasized instead [9], [10], [11]. Impact and research-to-practice terms [12] may represent partial or potential shifts back towards the practice-focused origins. Positionality and reflexivity represent shifts towards reflection on the embodied human aspects of research [13], [14]. Coloniality and criticality represent shifts towards research as a tool to upend oppression [15], [16], [17]. As each of these terms gets introduced and grows through editorials, thought pieces, and methodological guidance writing, they form an explicit representation of the methodological discourse and the community's values and directions.

In parallel and beyond the explicit methodological discourse, each paper, each review, and each process of publication forms its own implicit contribution to the methodological discourse [18]. In engineering education, we design and conduct methods to respond to the norms of engineering education, education research, and social science more broadly; we engage in processes which collectively recreate or upend our methodological norms and conventions. As authors, we write methods sections that we think other reviewers and audiences will see as valid, detailed, informative, and descriptive. As reviewers, we make determinations of quality and publish-ability, and we provide feedback to help meet those standards. As editors we make judgment calls on reviewer decisions and enact the strategic agenda regarding the standards. As mentors, advisors, and educators we provide guidance for next researchers to learn the rules of the system. In each of these roles, we can reference the explicit methodological discourse by citing and using methods terms, or not, and we can adhere to and in the process co-construct the norms and expectations of acceptable methods, or we can resist them.

In light of this arrangement, perhaps there is an inherent performativity to the process of presenting our works to each other for review. By using the words quality or positionality and a few well-placed citations (i.e., see above) we can indicate our knowledge of methodological discourses. By mirroring the impact and merit language valued by an institution like the National Science Foundation, we indicate our familiarity with (and insider status relative to) its review process. Qualitative researchers can perform an attention to quality by knowing how to discuss the Big 8 criteria [19] or the components of qualitative process validation [8] or a responsible engagement with positionality. If there is an inherent performativity to engaging the methodological discourse, I think we always hope it is only the most visible part of an underlying meaningfulness. The words are less important than the reality, but the words also represent and create a part of the reality.

3. Development of the Author's Perspective

I learned research methods outside of an official engineering education PhD. Even within my social science / education research training, I was something of a pragmatist rule breaker. I usually engaged with the work around a gut instinct on what needed to be known or studied, and then I took a pragmatic and theoretical approach to finding the best approach for that study. My advisors encouraged the rule breaking pragmatism, they didn't mind me forging new ground methodologically or theoretically and would give me sufficient critical feedback to progress the work towards their satisfaction and appropriate scholarly justification. I skipped my own recommended research methods class, asking instead to take an anthropology class and a critical qualitative methods class instead. I wanted to learn to think differently, to hone a particular set of methodological and theoretical skills.

My first experience with engineering education methodological norms was through reading and even more through writing to the ASEE conference and Journal of Engineering Education. I think this outsider-to-insider movement made more of the rules of engineering education look strategic and arbitrary. I felt what I might have considered gatekeeping the norms of the conference, the divisions, or the journal. I realized I needed to learn ways to adapt my prior norms to fit within a discourse of engineering education to reach that audience. When I encountered reviewer pushback, I elaborated methods until journal reviewers were satisfied. I told myself (with support from advisors)—I'm right and the reviewers are right, I'm just figuring out how to meet them intellectually, adding more honest detail until everyone's happy. Over time I relished being asked to provide more transparent methodological detail, I was excited to get to share more.

As I became more experienced in engineering education, I started to conceptualize my own style around methods writing. Around the time my first journal papers from dissertation were published, a mentor of mine complimented the methods section on one of those papers [20]. She said she shows it to students of hers as a good example of how to write a methods section. Hearing this, I felt self-doubt rather than pride—it had seemed like I made up my method (via pragmatic rule invention) and then it seemed like I only kept writing more and more methodological clarification to satisfy the reviewers. It had seemed like nothing special, or like a particularly ad hoc way of writing about methods. Over time, I realized this approach was helpful and not entirely common. I came to refer it as an "honest methods section.": 1) explaining the what and the why of the research process that really happened, in detail, and 2) probing the subtler details of how research insights were really arrived at. As I began to teach about research methods, I formulated this approach as an "honest methods section." It became a guiding principle I would tell my mentees to get started and revise methods writing.

As I took more leadership as a faculty member, I participated in writing methodological guidance of my own. I wrote with colleagues about positionality to help call for more engagement around positionality, and I watched the different ways the paper was cited. For some, we clearly triggered a meaningful reflection on the ways positionality shapes our work in epistemological and ontological dimensions. For others, it seemed the uptake was perfunctory, at least as represented by their writing. These citations were typically short and represented positionality writing practices that our paper had already positioned as less useful (i.e., acknowledging reflexivity practices in the abstract or establishing transparency of author identities, rather than contextualizing the ways identities impact methodology). I saw this as performative engagement with the explicit methodological discourse—citing positionality to show you know about positionality, rather than reflecting on deeper dimensions of positionality impact that reference called for.

Now I am a member of an editorial board, and I see performative methods far too often. Once a past editor of an engineering education journal told me their biggest fear was that a paper that met all the required components and style of the journal, but was vapid or wrong in its actual content, would be accepted; whereas a paper that was missing some key technical requirements but had truly important findings and purpose would be rejected. Within my roles reviewing and teaching, I fear this the performativity around methods is becoming the norm, not the exception.

4. Paper Purpose

What I'm writing towards in this paper is a reinvigoration of meaning into all our conversations and practices and methods. This paper asks for reflection on meaningful engagement in research methods, meditates on what that means, and gives some guidance on how to continue in that direction. I do not want to add new dimensions of research performance, but among all of the methodological guidance we already have, I want to try to help give guidance that could move us towards meaningful research and writing. Others have provided similar paper guidance beyond engineering education [21], [22]; in this paper I provide my own reflections[2], specific to engineering education, on more meaningful enactments the research methods discourse in our research writing.

5. Reflective Examples of Performative and Meaningful Methods Writing

Next, I overview categories that are typical for research paper methods sections and discuss examples of meaningful and performative approaches to the section.

5.1. Methodological tradition

Methodological traditions are helpful to guide empirical study in a scholarly tradition. Functionally, using and citing a methodological tradition helps distinguish formal research from less systematic queries (the concern of the original discourse on rigor), and allows the tradition to develop its own guiding logic that separates it from others (the way forward from proponents of methodological diversity). A typical methodological citation may read like "We utilized X methodology (citation), which is appropriate for Y topics and conditions." It typically 1) names the methodology, 2) uses a citation, and 3) justifies its appropriateness for the study. None of these are invalid or unwelcome details for a methodology section, but they can fall short and appear performative when not backed up with more genuine engagement. For example, consider a methodology section that states "We utilized ethnographic methodology (Cresswell), which is appropriate for investigating culture" and then one goes on to introduce a pure interview study. The trouble is most ethnographers would agree that the baseline research method for ethnography is participant observation, and they would not consider Cresswell to be a primary source on ethnographic methodology. Further, the justification appears technically true but perfunctory and not thought through.

For a more meaningful or honest methodological tradition section, I recommend (1) name the methodology, (2) cite a primary source expert or reference text on the methodology, (3) explain to what extent and in what ways the study represents the methodology and any adaptations away from traditional approaches. I rarely use the words "justify" or "appropriate", I simply show in detail how the methodology applies. Optional additional content could discuss how the methodology was utilized originally and how it has been applied in the disciplinary context

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[2] I chose a reflection rather than other approaches to the paper: A systematic literature review seemed beyond the scope of my capacity for this study at this moment and seemed like an effective but indirect way of making the argument. A purposive sampling qualitative review of example papers seemed potentially not collegial, as I would need to critique specific work. I chose instead to remain somewhat vague about the papers I am referring to but specific about the examples to directly prompt reflection.

(engineering education) being studied—this previews a possible additional methodological contribution if the study is methodologically novel or an exemplar in some aspect.

5.2. Recruitment and Institutional Context

Although often written as two separate sections, I have combined recruitment and institutional context here because my thinking about the meaning to distill from both is similar. A generic recruitment text may say, "We recruited eligible participants using an email message," and it may add copious details on recruitment process details. A generic institutional context section typically lists institutional details of demographics like PWI or HSI other institutional features; it may go on to list many demographic statistics. These are not unwelcome context, and I understand the appeal because they're easy to generate. But without an explanation of why the statistics and facts matter they can come across as filler content.

To help spur more meaningful and honest methods recruitment and context writing, think about the ways both of these aspects of your study could deeply affect the participants you have, and how the participants you have would shape your findings. In quantitative studies[3] these impacts of sampling are called "selection effects"; in qualitative studies we rarely call them that (because we typically cannot pretend to engage random sampling and would not see non-random sampling as a bias). But, qualitative research still has its own selection effects in the way our recruitment and selection / sampling could shape the findings and outcomes of the study. For example, in any given qualitative interview study, you may be limited by not being able to (and it not being ethical to) coerce a representative sample to talk to you. So, inherently you may only be able to study the portion of the population most interested in talking to you. If someone is afraid of, resistant to, too busy for, or physically incapable of responding to your recruitment method, they will not be a part of your study. Similarly, your institutional context is its own form of sampling—if you conducted the study at a PWI you are inevitably limited to a sample that may have mostly white people and at least limited to only people for whom a PWI context is familiar and normal. This is a valid qualitative choice, but ask yourself how that institutional context might shape your findings. If you can help connect this important "who" your participants are to "why" it matters for your study, it is a lot more meaningful.

5.3. Data Collection

A core part of any methods writing is what the data is and how it was collected. Here, the generic or perfunctory writing focuses on details that are technically true but are standard across most all research studies and/or reveal almost nothing useful about the study to the reader. "We conducted interviews on Zoom. Interviews lasted between 45 minutes and 60 minutes. We used a semi-structured interview protocol." These details are a reasonable start, but they are becoming so standard they would be the expectation for most studies at this point. If we take an absurdist approach to expanding this content further: "The interviews were conducted in the English language. The Zoom settings included a blurred background and noise cancellation. The protocol

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[3] You may notice that most of my examples come from qualitative and critical research contexts, and are not particularly aimed at quantitative research. This is indeed my standpoint and perspective. I offer the reflections to all researchers but recognize much of the advice may be particularly useful for critical and qualitative researchers. If quantitative researchers resonate, I would welcome their help in expanding this advice.

was printed on a piece of white paper in black ink." It isn't that any of these details are disallowed or untrue, but their relevance is only pertinent insofar as the writer can explain it.

For more meaningful and honest methods writing about an interview, at least begin by sharing the interview protocol (as examples in the text or in full in an Appendix). Further, consider sharing about how the semi-structured interview protocol was developed. Was there a strategy for which questions would come first, second, and last? How was rapport established? Did the interview protocol change or develop over the course of the interviews, as you learned some questions confused participants and some were repetitive? What was the strategy for follow-up interview prompts or decisions on how to navigate content in collaboration with the participant (if they started speaking about an answer to a question out of order, did the protocol adapt to that choice or stick closer to the order)? Also, consider sharing how the protocol aligns with your theoretical or methodological framings.

5.4. Data analysis

I think data analysis sections are perhaps the most crucial in a paper, and the most likely to be generic, performative, or missing. By writing up your analysis procedures, you are explaining to the reader how your findings are created and what the research entailed. To me, the most common generic analysis writing sounds like, "We transcribed the interviews manually or using an AI or a paid service. We checked the transcripts for accuracy. We performed open coding and axial coding. The following themes emerged." The details about transcription are not unwelcome, but it is such a fundamental necessity of qualitative research to transcribe and check for accuracy, that if it was not stated every informed reader would still assume there was a transcription process. The use of AI could be a relevant detail if you have a reason, but I presume most readers do not care that much unless there is a reason to doubt the accuracy. The statements about open coding, axial coding, and emergent themes are so ubiquitous and insufficient to really understanding an analysis process. These processes include a lot more decision-making that you can delineate.

Meaningful and honest analysis writing could go further to unpack the decision-making processes behind the methods. First, I like to alert people to their own research questions or purpose statements and to operationalize each of those words in terms of their research process. If you are looking for student experiences of success in undergraduate education, you should realize that "success" is not a simple concept, and you may hold a different definition from your reader and from your research participants. Unpack key terms in the research questions and ask what it would really mean to answer them, what would count as expected or surprising data to support the answer. Especially if you are coding, you may have a temptation to code and simply represent all the data or the data that feels most interesting to you. Ask yourself why it was interesting, particularly towards the research questions and topic at hand. If you uncover new insights, write them into analysis. Optionally, you could discuss the team's process for coding and whether any procedures for interrater reliability or refining the approach were utilized.

Second, I think coding is typically only the first step to answering a research question, there is typically something beyond a category that the research is hoping to find. So, what beyond coding did the analysis entail? Did you think as a research team to consider each quote and what different interpretations it might bring up? Did you think from a particular theoretical or pragmatic perspective to see what the quotes might have meant? Themes don't just "emerge," they are synthesized and selected. How did you move towards those themes as an individual author or author group? Were analytical memos used to help cohere groups of findings? Were prior approaches attempted and discarded because they didn't achieve the research purpose? Interrogate these dimensions, and to the extent there are interesting insights regarding the research here, include them in the writing. Further, check for alignment with your theoretical and methodological approaches.

5.5. Quality terminologies

There are many terminologies that indicate an attention to empirical quality or rigor. As any other sections in the paper, these can be written generically / performatively, or meaningfully. A typical way these might be introduced is "We took the following measures to ensure quality:". While qualitative researchers might engage with these exhaustively, they might also zero in on one like "We conducted member checking to enhance credibility." I find this sentence performative and generic because: 1) member checking is a known "good" thing, 2) it is too wide a concept to simply list without description, 3) the quick attachment to a justification regarding credibility seems to undercut its meaningfulness.

For more meaningful and honest accounts of member checking, consider elucidating the complexities involved. For instance: at what stage was member checking conducted? If the member checking only entailed a transcript accuracy check, this is not particularly insightful or controversial—one would hope the transcript is accurate and that the participant is generally comfortable with what they said. A deeper sense of member checking would come from analysis interpretations and claims regarding the participants' interview content. What are the various levels of member checking and how did you make choices about what to engage? If a participant disagreed with your findings, would you / did you change them or find a middle ground?

I have found in critical qualitative studies, there are often some populations or participants for whom the findings will actually be troubling, invoke disagreement, or be personal or sensitive. Member checking is a very important topic to think about, but where I draw the line in any study is often nuanced. Perhaps I want to check back in with a participant to see if I'm right about my overall sense of an analysis claim, even present the idea of the argument in words through the interview. Perhaps I think this is actually more kind, responsive, and realistic than sending the entire paper draft and asking for feedback. Perhaps I hold back on (and do not send) the paper to side characters in an ethnography who might disagree with my analysis of their classroom observations, as I am confident enough in my interpretations as observer and triangulations with the interview participant perspectives to be able to put forward my analysis. I may be aware that along the dimensions I am writing about the class, participants simply disagree about the meaning and interpretation of events, and as a critical scholar I'm not presuming to represent all perspectives equally. In any case, a thoughtful explanation of the member checking process and justification for the choices made actually does enhance credibility, to the point that I rarely need to invoke the word to convey that impression to my reader.

5.6. Ethics

As most of us are regularly reminded in our roles, researcher ethics is a crucial topic engage in our research practices. However, most statements regarding research ethics written in methods sections are generic and performative, such as "The researchers secured IRB and followed all required procedures. We paid $20 Amazon giftcards as an incentive for interview participation and read the consent form out loud at the beginning of the interview." While these descriptions of adherence to IRB and incentives are acceptable, they are generally already presumed and can often be handled by a checkbox on the journal or conference website (yes, a human subjects research IRB and training was procured for this study). Similar to some other perfunctory content, this is not unwelcome content, but it is not the most meaningful ethics-related content that could be shared and if it was not stated it would already be presumed to be true. If these details are shared, think about why and perhaps clarify why. Perhaps there is some element of the study that would look ethically risky, and you want to clarify that IRB was involved in the review. Perhaps the fact that people were incentivized appeared crucial or influential to the participants or the development of the findings. We have all conducted an interview or survey where someone either declined the incentive or seemed so focused on the incentive they might have said anything to receive it.

To move towards more meaningful and honest discussions of research ethics, consider whether there were any true ethical issues, and if so, how were they navigated? Perhaps there were power dynamics in the research process, perhaps there was an institutional authority figure or a supervisor as the interviewer or researcher and a student supervisee might have felt compelled or coerced to say more positive things. Perhaps there was confidentiality implied or stated that was or was not maintained in the process of writing the paper, perhaps the interviewer implied confidentiality but the participant would not have been aware that a professor at their school could later be part of the research team and they might not have been so honest about their mental health challenges or academic dishonesty if they had realized. Perhaps the study involved some minor or major deception—I find myself not always being equally transparent about my study goals, say, if in a study of critical whiteness and masculinity there is a white man who seems to embody many of my critical normative claims but it would be more useful to keep them talking as if in agreement with them than to break rapport and criticize their ideas. Any of these ethical issues might have been intentionally navigated in a particular way, might have remained a concern and something the team was aware of, or might have only become apparent at the end of the study. None of them are ethical dealbreakers, as long as there is a thoughtful acknowledgement of the ethical dimensions. This may sound more ethically performative, rather than meaningful, and perhaps it is. But I think ethics are ultimately on the conscience of the researcher and a reader need only be explained about ethical conundrums encountered by the research team if they lead to greater insight. So, perhaps I recommend you perform your ethical awareness by discussing the most meaningful dimensions of ethics that you encountered in your project. Otherwise, the presumption is you behaved ethically as is required by your university or other institutional position.

5.7. Limitations

While all research has limitations, I typically do not write a separate limitations section for a qualitative study. Instead, I try to approach being careful, limited, and precise in my methods descriptions and findings claims so that I do not have to over-promise and then counteract in limitations, I simply say what it is that I think. A generic or performative way of discussing qualitative limitations is to simply say "The study is limited because of a small n and may not be generalizable." This is not a particularly useful statement, since small n and lack of generalizability is true of nearly all qualitative research and is not a goal of most of it.

For a more meaningful consideration of limitations, I would ask: is there something that really limits the study from the perspective of the qualitative research? Is there something that a reader could reasonably infer that you want to guard against? Towards the second question, I actually tend to write explicit "how to read and what not to infer" type of *delimitations* sections instead of limitations. So, rather than saying "this study is limited in that it only investigated 11 Latinx undergraduates and is not generalizable to all Latinx individuals," I will say "this study should not be taken as representative of a wider population." I prefer to give explicit guidance on what to take away / how to read rather than limitations because 1) having 11 participants isn't fundamentally a limitation (unless people are reading all work as quantitative), 2) I've found being explicit about the biggest danger for misreading and misinterpretation is always helpful. Instead of "This study is limited by not being able to determine causality or intentionality," I would simply state "A reader should not infer causality or intentionality from this study." The advantage of the latter—it's more emphatic, it doesn't imply my work is limited, and it leaves open the possibility that I may actually not believe causality and intentionality are truly knowable.

Table 1 Summary of Reflective Examples:

Topic or Dimension	**Definition**	**Performative or Generic Content**	**Meaningful or Honest Content Direction**
Theory	Theoretical lens or framework guiding study	Utilitarian "we used the theory to" Book report, not operationalized	How the context the theory was developed in differs from the context you studied? Operationalize the theory with key terms and apply to your study.
Methodology	Methodological tradition or approach guiding study	Simple justification: We utilized X methodology (citation), which is appropriate for Y topics and conditions.	Explain to what extent and in what ways the study represents the methodology. Are there any adaptations of traditional methodologies in your study?
Recruitment Institutional Context	Process for recruiting participants Key features of the institutional context	"We recruited eligible participants using an email message. The institutional context was an R1 PWI."	How might recruitment / sampling have created selection effects? How might the institutional context shape your findings?
Data Collection	Protocols, procedures for data collection (interviews, observations)	"We conducted interviews on Zoom. Interviews lasted 45 minutes to 60 minutes. We used a semi-structured interview protocol."	How was protocol developed? What was the strategy? How were follow-ups or decisions made on how to navigate the interview? Did interview protocol or strategy change over the course of the interviews? How was rapport established?
Data Analysis	Procedures for analysis	"We transcribed the interviews manually or using an AI or paid service. We checked the transcripts for accuracy. We performed open coding and axial coding. The following themes emerged."	What did it really mean to answer our research questions? How did we go about finding the answers? What beyond coding was the analysis? How did we meet (if we did) and confer different interpretations among the coauthors team?
Quality / Credibility /	Discussion of key quality	"We conducted member checking to enhance credibility."	At what point and with what depth did you member check? How did you make choices about what to

	terms such as credibility		engage? If a participant disagreed with your findings, would you / did you change them or find a middle ground?
Ethics	Ethical conduct of human subjects research	"The researchers secured IRB and followed all required procedures. We paid $20 Amazon giftcards as an incentive for interview participation."	Were there any true ethical issues? How were they navigated? Examples: Power dynamics (an authority figure or supervisor as interviewer or researcher), Implicit confidentiality that could not be maintained, minor deception
Limitations	Discussion of limitations, or delimitations of the study	"The study only has <a small n> participants which limits generalizability."	Is there something that really limits the study from the perspective of the qualitative research?

6. Discussion

6.1. Assessing Performativity

I have developed the above sense of normative limitations of our methodological writing in engineering education through years of reviewing, mentoring, and teaching on research methods. In writing the reflections above, I have wondered what the cause or source of the limitation is.[4] I have referred to this topic as participation in and enactment of methodological discourses [3], [18]. By nature, we both perform and meaningfully adhere to those methodological discourses and norms, in order to be reviewed and to have our work understood and viable for the discipline. But it appears that our discourses and enactments are sometimes leading to performativity rather than the underlying meaningfulness that was invoked.

If the problem is with the community's writing process norms, I hope that the contrasting examples have helped elucidate what might be more valuable about a meaningful methods writing. Perhaps a greater attention to written communication from writer to an audience, with rhetorical goals of persuasion or explanation, would help authors articulate their processes more transparently.

However, on some of the most crucial topics such as analysis and research design, I fear performative writing may be driven by a lack of deep thoughtful engagement with the research process. If so, my advice to write more transparently may feel harder for some readers to take on board, unsure where to find dig for that deeper layer of thinking or wishing to redo their own graduate training.

6.2. Advice for Moving Towards Meaningfulness

If you are wondering how to get started with more meaningful research writing, particularly if you're someone new to education research, I have two main directions. As I mentioned, I refer to the style of methods writing that truly explains in detail the what and why of the research as an "honest methods section." This honest methods section doesn't skip details, it doesn't force a

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[4] One possibility is the performativity is driven by publication word limits or remnants of engineering cultural positivism among reviewers or audience [23]. If this seems to be the case for some authors, I recommend considering these as constraints that one can react to with strategy and creativity, rather than as dictating an approach [24]. We can all continue to reshape the norms of our discipline through each act of writing.

justification of a procedure where none is earned. If you are wondering how to get started, consider honestly writing out what you did, how you did it, and why, before you worry about the traditions, citations, justifications, rules, quality measures, etc. If you write out what happened and why in detail, if you consider the types of reflection questions in the table above, you can then keep expanding, refining, or summarizing to adhere to the norms of the disciplinary journals. I think this strategy can help make methods writing less daunting and avoid performativity. It also allows the flexibility to innovate and adapt and then represent those innovations transparently to your reader.

If you are midway through a project or at the end of one and draw a blank regarding what, beyond the basics, to write about your methods, I hope the reflection questions in Table 1 help elucidate some directions that can be taken even late in a study. For example, reflecting on research questions, deciding what they mean to you, elaborating the actual analysis process to answer them—this is a crucial and continual reflection. At any time, asking and answering them will lead to important insights. So, if those processes already happened, reflect, uncover, and elucidate them; if they have not yet happened, take the opportunity to refine your analysis procedures more deeply.

7. Conclusion

In short, I want to call for the community to bring back the challenge and the joy in new research about the social processes of education and to represent that challenging joy in acts of writing to have others deeply understand our work. Truly pushing the boundaries of the knowledge domain, thinking theoretically, discovering new knowledge, and finding practical solutions should not look predictable, cookie cutter, perfunctory, or performative. If we reinvigorate those realities in our research, I think we will find the message we want to tell others about how that research happened.

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