Considerations of Research Quality in the Review of Interpretive Engineering Education Research Manuscripts

	Front parts of the article	*Middle and end parts of the article*
Theoretical validation concerns the fit between the social reality under investigation and the theory generated	Does the article clearly articulate / define the social reality (SR) / phenomenon under investigation in its *nature*[a)] and *scope*[b)]? a. Do **theoretical frameworks** (if applicable) purposefully clarify, define, or illuminate the phenomenon of interest? b. Do the **research questions** target a well-defined aspect of the SR (**alignment with theory**) and clearly delineate what is investigated (and what is not investigated)?	Are the theories / findings generated credibly grounded in the data? (**Thick descriptions**) Do the findings present, name, or illustrate meaningful patterns that generate significant insights into / understanding of the social reality under investigation?
Procedural validation concerns features of the research design that inherently improve the fit between the reality studied and the theory generated	Are the methodology and methods chosen inherently suited to elicit data and insight about the social reality of interest? (**Alignment of methodology**) Are the data collection methods or instruments appropriately informed by the theoretical framing and methodology? (**Alignment of methods**)	Is the research design able to elicit an authentic view on the social reality of interest? (suitability of data collection methods, scope of data collected) Is the process of analysis, as described, suited to elicit significant insights that are credibly supported by the data? Do the authors consider key challenges that might prevent them from 'seeing' or 'capturing' the social reality of interest? (**Limitations, subjectivity**)
Communicative validation concerns the integrity of the interlocking processes of social construction with the relevant communication communities	Does the description of the data collection methods or instruments provide sufficient detail to indicate the data were authentically co-constructed on participants' own terms? (**Data collection, instruments**)	Do the authors use the right terms, or meaning conventions, for the chosen publication outlet/ target readership? I.e., are the authors contributing, in the most productive and accessible way, to the academic discourse? (**Link of findings to relevant literature and theory**)
Pragmatic validation concerns the compatibility of theoretical constructs with empirical reality	Did the methods (framed by both theory and methodology) resonate in the research context and elicit data specific to the social reality of interest? (i.e., something that a generic line of inquiry would not have elicited?)	Do the findings provide significant explanation, insight, or empathic perspective beyond mere description? (**Resonance**) Are the findings transferable to other settings? Do the authors clearly articulate what the contributions of the study are and how they might lead to further research, or change in how something is done or understood? (**Transferability and relevance**)
Ethical validation concerns aspects of integrity and responsibility throughout the research process	Do the authors clearly outline why the research was conducted? Was the need for the research articulated in a compelling manner? Do the authors productively engage their own values and goals in the context of the research?	Are findings and conclusions offered in a manner that genuinely considers the perspectives of the intended audiences and promotes understanding that is oriented towards positive change?
	Does/did the research "do justice" to all stakeholders in the research process (e.g., participants, team members, audiences)? Is there room to articulate either the rationale for the study or the findings in ways that facilitate the empowerment of stakeholders connected to the research? (**In-process research ethics**)	
Process reliability concerns the mitigation of random influences on the research process	Are there circumstances that threaten the consistency or dependability of any part of the research process? Are there obvious errors in research design or implementation? Are there grammatical or spelling errors that detract from the quality of the paper? Does the structure of the paper purposefully support the coherent presentation of the study? Are references correctly used? i.e., do references accurately represent cited work?	

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