Commentary: Situative Approaches to Online Engagement, Assessment, and Equity

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Abstract

The articles in this special issue on Improving Online Learning Theory, Research, and Practice characterize online learning using a set of “diverse lenses.” Most of these articles draw primarily from modern socio-constructivist perspectives and applied psychological constructs derived from more basic research. My strong embrace of situated cognition and design-based methods led to questions about how key issues in online learning such as online engagement, summative and formative assessment, and equitable learning were conceptualized. Specifically, I contrast how the socio-constructivist approaches in most of the articles might be re-conceptualized in a situative approach called *participatory learning and assessment*. I conclude by summarizing the potential value of a deeper embrace of situativity in online learning theory and research.
Situative Approaches to Online Engagement, Assessment, and Equity

Given the explosion of online learning in 2020, I am pleased that the editors have assembled an impressive set of "diverse lenses" on online learning from such esteemed authors. I am honored to comment on this work. I first build on the insightful discussion in Hoadley and Campos (2022/this issue) to distinguish educational psychology research that applies psychological constructs and embraces socio-constructivist theories from learning sciences research that focuses on learning contexts and embraces situative/sociocultural theories. The articles by Shea et al., Archambault et al., and Martin and Borup (all 2022/this issue) are relatively consistent with the first approach, and capture an influential perspective on online education, whereas my online research and practice embrace the second. My goals in this commentary are to argue that the core articles in the special issue did not embrace situativity as deeply as they asserted, to provide examples of what a deeper embrace might look like, and to summarize the implication of situative theory more generally across the entire set. I will focus disproportionately on the review of the Community of Inquiry (CoI) framework by Shea and colleagues (2022/this issue) because the framework is so influential and explicitly articulates the tacit assumptions in two of the other articles.

Characterizing and Supporting Online Engagement

I deeply appreciate the coherence the CoI framework has provided for online learning practice and research and the elaboration of the framework in Shea et al. (2022/this issue). They suggested a focus on critical thinking and higher-order learning may distinguish the CoI framework from more sociocultural frameworks. In my opinion, a more significant distinction is CoI's use of the meta-construct of "social presence" to characterize and measure learner engagement with peers and instructors. The significance of social presence for this commentary
is rooted in an important, but unappreciated, aspect of situative theories of cognition. This aspect concerns the way one reconciles the different "levels" of human activity (i.e., individual, social, and cultural). As detailed in Greeno et al. (1998), the "situative synthesis" reconciles these differences dialectically. A dialectical reconciliation treats all forms of individual activity as "special cases" of sociocultural activity. By understanding and studying learners' social activity with peers and instructors in terms of learners' perceptions of social and teaching presence, CoI tacitly embraces the more common "aggregative" reconciliation of human and social activity. Aggregative reconciliation uses aggregated assumptions about individual activity and perceptions to characterize and support sociocultural activity. Consider, for example, that Shea et al. (2022/this issue) suggested CoI might be expanded to a theory of online learning by drawing from sociocultural theories. A situative perspective suggests that starting with aggregative constructs such as social and teaching presence seriously under-represents the social interaction that is ultimately stretched across learners, peers, instructors, and resources. An alternative dialectical expansion, drawing from situative theory, would reframe teaching presence and social presence as special cases of sociocultural activity in a "community of practice" (Lave, 1991, emphasis added). This means focusing primarily on sociocultural activity and shared perceptions and only secondarily on individual activity and perceptions.

Archambault and colleagues (2022/this issue) provided a valuable model that has great potential for teacher professional development for online contexts. But the Academic Community of Engagement frame (ACE, Borup, et al., 2020) at the heart of their model presented a similarly modest embrace of situative theory by characterizing Vygotsky's zone of proximal development as an instructional prescription. This characterization is widespread, but a more situative dialectical interpretation treats the ZPD as a characterization of meaningful
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learning rather than a prescription for teaching. From this perspective, meaningful learning involves, by definition, using socially constructed conceptual, linguistic, and material tools to participate more successfully in culturally defined practices. This characterization means students can be in the ZPD in isolation without the active support of a more capable other. This is not meant to argue in favor of socially isolated learning, but rather to point out that social support does not automatically place students in a ZPD (Marsh & Ketterer, 2005).

I have similar concerns when situative theory is equated with "authenticity." Archambault and colleagues (2022/this issue) reiterated the widespread belief that "a situated learning environment should be one that reflects the real-world applications of the knowledge gained as well as the environment in which it will be used" and that learners should "be provided with authentic, real-world activities that are ill-structured," and "have access to experts, their information, and processes" (pp. XX). From my perspective, socio-constructivist assumptions about social presence, the ZPD, and authenticity lead many online educators to create complex collaborative group projects that ultimately may be counterproductive. Exacerbated by the goal of instructor presence, these assumptions can create unsustainable expectations for instructor guidance of collaboration. Unrealistic expectations for online collaboration and authenticity can lead to learner frustration and instructor burnout. Presumably, due to the unquestioned value in online collaboration, there is scarce research on this issue (but see An et al., 2008; Haythornthwaite, 2006).

My concerns above follow from my embrace of productive disciplinary engagement (PDE, Engle & Conant, 2002) and expansive framing (Engle et al., 2012). These frameworks and design principles are among the most useful and used educational insights to emerge from situative theory (Engle et al., 2011; Hickey, in press). The online approach that my colleagues
and I call participatory learning and assessment (PLA, Hickey, et al., 2020; Hickey & Rehak, 2013) emerged from previous studies of educational multimedia (Hickey et al., 2003; Hickey & Zuiker, 2012) and videogames (Barab et al., 2007). PLA suggests that online educators focus primarily on fostering productive forms of disciplinary discourse in social engagement routines. This means, for example, that instructors and researchers should focus less on learners' perceptions of social and teaching presence and more on helping learners co-construct shared meaning of course concepts by supporting their efforts to find "common ground" (Paulus, 2009). This means that all learner interactions with peers, instructors, and resources should be scrutinized for evidence of "engaged participation" (Greeno et al., 1998) in the social practice and discourse of the discipline at hand.

The first design principle in both PDE and PLA is that learners should "problematize" or "frame" learning from their own perspective and interact with others doing the same. Expansive framing further pushes instructors to help students find connections with people, places, topics, and time beyond the course and from their own experience. Such frames contrast with the authentic frames designed by experts or instructors that most of these authors suggested. Engle et al. (2012) argued that experts' perspectives, models, and examples, even when simplified, are often overly abstract and removed from learners' prior experience and imagined future applications. This makes it difficult for learners to "transfer in" relevant prior knowledge and experiences, including culturally and linguistically diverse knowledge and experiences. This in turn makes it difficult to learn concepts in ways that are likely to "transfer out" to a wide range of future contexts.

A more situative framing of learning helps learners hold themselves and their peers accountable for engaging productively in the discourse of whatever discipline they are entering.
In theory and practice, this discursive engagement is very different from Martin and Borup's (2022/this issue) characterization of engagement in terms of communication, interaction, presence, collaboration, and community. A strongly situative perspective argues that if engagement is neither disciplinary nor productive, these other aspects and learners' perceptions of cognitive presence are of little consequence. I also suspect that discursive characterizations of engagement may be easier for parents, siblings, and others to understand and support when providing informal assistance to K-12 online learners, as summarized in Greenhow et al. (2022/this issue) and elaborated in Greenhow et al. (2021).

Formative and Summative Assessment

As summarized in the article by Greenhow et al. (2022/this issue), the rush to online instruction in 2020 helped many more educators appreciate the challenges of assessment in online education. Reflecting widespread assumptions about assessment, Archambault et al (2022/this issue, p. XX) asserted that “learner-centered assessment shifts the focus to the student and the learning process through authentic artifacts” and that such artifacts can include “projects, written assignments, portfolios, and performances that provide a greater emphasis on higher order thinking skills” (p. XX, emphasis added). As the validity theorist Messick (1994) pointed out, it is challenging to gather valid evidence of learner progress using such artifacts, when compared to more objective assessment formats. This challenge is exacerbated online, where learning can be entirely aligned to a limited number of performances or projects. Many educators who heeded calls for authentic assessment (e.g., Harris, 2021) in the pandemic were overwhelmed with increased grading demands, in part because students expect detailed warrants for every deduction.
The under-appreciated concern here is that instructor time spent engaging in grading, formative feedback, and other private interactions with individual students cuts into more efficient and potentially more effective public instructor interaction on course resources and student work. In PLA, the "primary" social engagement routines are followed by "secondary" formative self-assessments that learners can use to maximize their understanding of course concepts. Where appropriate, more objective automated multiple-choice assessments "discreetly" help motivate prior engagement and assess mastery, but without driving instruction. Within and across offerings of a given course, learning is "aligned" across these increasingly formal representations of disciplinary knowledge in iterative cycles of design-based research (DBR; Hoadley & Campos, 2022/this issue; Greenhow et al., 2022/this issue). Rather than applying psychological constructs such as presence derived in prior basic research, DBR builds "local" theories in iterative refinements. These theories are represented by design principles that are sensitive to the contexts where they emerged and where others might use them.

As elaborated in Hickey and Harris (2021), the situative synthesis provides a theoretically coherent framework for (a) moving the functions of private formative assessments onto public student artifacts, then (b) using public student reflections to efficiently assess and grade student work, while (c) advancing collective discourse and individual understanding. Such reflections do so because (a) public reflections and instructor feedback are directly formative for authors and peers, (b) reflections provide summative evidence of prior engagement that can be quickly graded, and (c) reflections proleptically (Cole. 1995) shape subsequent engagement. Thus, more objective assessments represent a peculiar (or even bizarre) form of disciplinary discourse, but they support more authentic forms of discourse by freeing up instructor time for public engagement and motivating student engagement in prior activities that lead up to them.
This perspective sheds new light on Shea and colleagues' (2022/this issue) observation that "because the CoI framework considers the presences as distributed among actors…. instructors' unique role in assessment is virtually disregarded" (p. XX). I infer this position is partly responsible for the limited consideration of assessment in the CoI literature, with a notable exception in Conrad and Openo's (2018) book. I assume that most CoI proponents embrace Conrad and Openo's skepticism towards "traditional" selected-response assessment formats and support for alternative formats. I suspect the skepticism towards more objective assessment formats helps explain the lack of evidence connecting CoI to increased learning outcomes beyond perceived learning or satisfaction. I was pleased to see that Shea and colleagues (2022/this issue) raised this concern and referenced the review of this research by Rourke and Kanuka (2009). But uncited studies by Wendt and Nisbets (2017) and Maddrell et al. (2017) go beyond referencing the limited evidence of impact of cognitive presence on actual learning outcomes. This is because they searched for and failed to find such relationships. I agree strongly with Shea and colleagues that experimental and quasi-experimental studies are needed to better understand how different online frameworks impact the learning of targeted knowledge and practices, and the transfer of that learning to subsequent environments. More specifically, comparison studies are needed where the same content is taught using different online frameworks, with learning and transfer assessed with an array of objective and subjective outcome measures.

Equitable Online Learning

The discussion of inclusion and equity across several articles was welcome and appreciated. Greenhow and colleagues (2022/this issue) reviewed how the pandemic highlighted these concerns and summarized the progress among educational psychologists in understanding
191 and addressing them. Tate and Warschauer (2022/this issue) articulated the many ways diverse
192 students bring unique assets on which online learning should draw. I add that additional asset-
193 based responses have emerged from sociocultural theories and the learning sciences (Agarwal &
194 Sengupta-Irving, 2019) offer new strategies that can be extended to online learning (Hickey et al.,
195 2020). Online educators concerned with equity might also benefit from the recent extension of
196 the *Funds of Knowledge* framework (FoK, González, et al., 2006). FoK is arguably the most
197 widely embraced asset-based approach to educational equity. It has been used and studied to help
198 teachers use diverse students’ cultural and familial experiences to support their learning. This
199 new extension is known as *Funds of Identity* (FoI, Esteban-Guitart & Moll, 2014) and
200 acknowledges the networked and multifaceted reality of diverse youths’ lives and schooling. FoI
201 sidesteps the cumbersome educator home visits central to FoK and is readily applicable to digital
202 learning and online education (Estaban-Guitart, et al., 2018).

**Summary and Conclusion**

In summary, I have argued that considerations of situativity in the special issue articles
204 represent relatively modest extensions of the socio-constructivist theories embraced by many, but
205 certainly not all, educational psychologists. I contend the considerations of situated *learning*
206 across several of these articles are more consistent with what Lave (1991) labeled "cognition
207 plus;" they still assign primacy to individual cognition while assuming that social factors
208 strongly influence that cognition. In the context of learner engagement, educational assessment,
209 and educational equity, I have used examples from my team’s research and practice to illustrate
210 how a more encompassing embrace of situated *knowing* leads to rather different responses to the
211 challenges of online learning.
Rather than framing cultural interaction as aggregated social presence (as in Shea et al., 2022/this issue), this alternative approach dialectically frames all three presences as "special cases" of socially situated activity. Rather than a ZPD using collaborative learning and "authentic" contexts (as suggested by Archambault et al., 2022/this issue) and domain-general forms of engagement (in Martin and Borup, 2022/this issue), this alternative approach suggests a zone of productive development whereby instructors help students frame learning from each learners' own perspective and then support productive forms of disciplinary engagement while students interact with peers doing the same. This approach responds to concerns that "alternative" assessments (as discussed by Archambault et al., 2022/this issue) can generate unsustainable demands for private instructor feedback, leaving little time for more productive public instructor interaction, and yielding dubious evidence of learning or transfer. Finally, much work remains, but our initial efforts suggest this alternative approach lends itself to the suggestions in Agarwal and Sengupta-Irving (2019) for extending situative approaches and incorporating new culturally-sustaining online pedagogies to respond to the concerns for equity and social justice nicely summarized in Tate and Warschauer (2022/this issue).

In conclusion, I acknowledge the conundrum facing proponents of situative approaches and design-based research in convincing skeptics to consider using their design principles. In the dawn of DBR, Shavelson et al. (2003, p. 25) acknowledged that "design studies are complex, multivariate, multilevel, and interventionist, making warrants particularly difficult to establish."

However, as introduced by Greenhow et al. (2022/this issue) and explored by Hoadley and Campos (2022/this issue), the challenge is that the experimental conditions needed to attain such rigor undermine the generalizability of findings when such "research-based" practices move into the "blooming, buzzing confusion" (Brown, 1992) of typical educational settings. DBR has
become much more widely embraced in the ensuing decades (Hoadley & Campos, 2022/this issue). But the conundrum persists.

As illustrated by the title and Chapter 2 of *How People Learn II: Learners, Contexts and Cultures* (National Academy of Sciences, Engineering, and Mathematics, 2018), there is now broad consensus among cognitive scientists that (a) contexts and culture matter a lot in learning and (b) context and culture matter a lot more than a similar group of experts concluded two decades earlier. But there is little consensus and open disagreement about what exactly this means for the design of instruction. I doubt that further consensus on this question is forthcoming. This collection of articles captures an important swath of answers to this question in online contexts at the intersection of educational psychology, educational technology, and the learning sciences. I hope that my observations have helped clarify the theoretical roots of the question and suggested some practical implications of a more stridently situative answer.

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