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Comments and Thoughts

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REJOINDER

Comments and Thoughts

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We are grateful to the seven respondents who have given serious consideration to our article. Their commentaries serve to widen its theoretical and practical implications and to widen its field of application. One example of this last contribution is Braun's suggestion that our analysis in terms of the C-A-P triangle could be used as a heuristic to provide a critique of current policy initiatives in the United States. He rightly follows up this point by adding that such analysis shows also how extensive and costly a coherent reform plan would need to be and how long it would take to implement, an unwelcome message to policy makers. They would need to be convinced of the force of the arguments if they were to be brave enough to take such a difficult path, which puts the pressure back on the educational community to work on developing the public understanding of the issues—an equally daunting task.

The comments by Salzberger indicate a more ambitious agenda, in that he looks to implications for the “training” undertaken of adults, by employers, and by public bodies, for the provision of information to the public, driven by a variety of motives, and for the issue of life-long learning that should become an increasingly strong focus of concern as the accelerating pace of social change makes social control more fragile. He makes clear that there is work to be done to explore the nature and scope of these implications: thus, for example, our five-step model of change might be fairly easy to apply in these very diverse contexts but the formative-summative analysis would be more difficult, and the use of the road map even more challenging. The problem is that this last component is a necessary one if the previous two are to be fully effective.

Alonzo and Heritage point out in their commentaries that the outline that we propose, though of great potential value, does not provide, on its own, a recipe for improved learning in classrooms. We agree with Alonzo that the concept of “misconceptions” is inadequate, and that the design of effective classroom tasks is a crucial second step in our five-step model. She rightly points out that a construct map cannot do this part of the work for the teacher, although we would suggest that in formulating an effective task a teacher might be helped by his or her knowledge of learning progressions, and by previous calibrations for the class concerned, and that interpretations of pupils’ responses to a starter task might be aided by matching these responses to higher or lower levels of achievement as indicated by a road map.

Similarly, Heritage points out that well-grounded schemes of progression are necessary but not sufficient for instructional improvement. She makes the particularly pertinent point that the “grain size” of an optimum intervention can vary according to the context. We agree that a road map must not be seen as a “one-size-fits-all” recipe, but we would add that in “steering” the interactive dialogue in a classroom, a teacher has to deal with the immediate challenge of the learner’s responses, but to do this in such a way that the dialogue moves in the direction of the longer-term learning aims. We would maintain that a road map can, by setting up a framework within which such contingent decisions have to be taken, help to improve the quality of those decisions. This is very much in analogy with the usual use of a “road map”—it can help you plan your path to where you want to get, but it does not, in itself, provide the motive force.

In his response, Dunne digs more deeply below the surface of our analysis. Thus he expands the agenda to include consideration of the potential value of a road map to the learner: it is clearly important to see this prospect in the context of the value to learners of developing a metacognitive overview of their learning. The problem of conveying to a learner the meaning of levels that are well in advance of that learner’s current understanding is an evident difficulty, and it may be that a rationale that better articulates the relationship between current and future understandings may be helpful here. We welcome his point that a given road map reflects a strategic choice of learning sequence, a choice that may not be appropriate for a context very different from that for which it was formulated. Our reference to the reports in the literature of arguments between those who favor a decision to delay mentioning the molecular model of the structure of matter until the evidence that leads to this hypothesis has been assembled, and others who prefer the alternative arguments for introducing that model from the outset because pupils will have heard about molecules anyway, is an example of his point that influences from outside the particular classroom can determine the optimum choice. Dunne also draws attention to the daunting task of combining domain-specific knowledge with appreciation of cognitive demand. This bears upon our formulation of the first step, the choice of strategic aims in our five-step model, and affects all later stages: for example, insofar as learners are actively engaged in the to-and-fro of dialogue, they are learning on two levels: the surface level being the understanding of the immediate task, the deeper level being their reflection on their own engagement in learning (see, e.g., p. 98 in Wood, 1998).

Engelhard and Sullivan go further than the other respondents in arguing for the value of seeing our approach in a different way by considering it in relation to a broader and very different theoretical perspective. This endeavor could be seen as pressing for, amongst other points, the broadening of our five-step model of pedagogy, seeing it as part of the ecological perspective, to use their term, within which learning plans are formulated and implemented. Seen in this light, their wider agenda has much in common with many theoretical discussions of pedagogy, which

have hitherto been notable in their failure to discuss assessment as a key element of pedagogy, a failure that Engelhard and Sullivan avoid by attempting to embed our approach in their perspective. The analysis by Black and Wiliam (2006) of classroom assessment in terms of an activity theory framework is an example of building a link to an ecological approach. However, it is not possible, within our present response, to do justice to the richer vein which they seek to explore, let alone respond to the 17 questions that they set out. We restrict ourselves here to comment on the last two of these: as pointed out above, we would not claim that a learning progression either could be or should be invariant across students and student groups, and in relation to the concept of “emergences,” we would say that our experience of effective dialogic interaction in classrooms illustrates how the best teachers deal with the emergence of understanding and with the diversity, within any group of learners, in the ways in which such emergence can be seen.

Finally, the response of Kyngdon differs markedly from the others in questioning some basic elements of the methods of analysis that we propose for the construction of a “road map.” We must emphasize that we are not claiming that the methods illustrated are the only possible way to analyze data from a learning progression, but rather, we are offering it as one method that we have found useful in formative work on progressions (i.e., in refining the progression through empirical observations), and in application of the methods (e.g., in designing teacher-friendly reports). We need to point out, however, two fundamental misunderstandings in Kyngdon’s reading of our article, and by doing so, hopefully avoid having other readers make the same mistakes.

First, we agree that the image of a learning progression as presented in our Figure 3 (Black, Wilson, & Yao, this issue, p. 83) can be seen to correspond mathematically to a partial order (and, in fact, it is also a multidimensional structure). Hence, in the absence of further detail, measurement across the components of this figure is not a straightforward procedure. Thus, what we describe in our Section 5 is a method for measuring within the components. We must emphasize that this is always a hypothesis for each component—where a component is found to be multidimensional, it is better represented as multiple subcomponents. The modeling of the entirety of a structure as complex as that shown in Figure 3 involves a considerably more complicated model than the one we discuss in our Section 5—one might, for instance, invoke concepts of ordered latent class models, such as is discussed in Wilson (in press) and Diakow, Irribarra, and Wilson (2011).

Second, we disagree that the ordering presented in a construct map (as described in our Section 5) denies the possibility of continuity between the levels of the construct. Kyngdon makes his own assumption here, that is, that the levels are discrete and hence are not commensurable. But this is indeed only his assumption. Our perspective is broader than this and allows that the levels of the construct be interpreted as “typical cases,” whereas the actual realizations can shade off in between the typical levels. Of course, there needs to be a serious effort made to establish a reasonable demarcation between these, and that is much of the work of the development of the outcome space. The Wright map is quite consistent with this broader assumption. Although beyond the scope of this article, an interesting question arises here, concerning the empirical testing of these different assumptions (see, e.g., Diakow & Irribarra, 2011).

In conclusion, we have been pleased and honored by the attention given to our article by the commentators. Their thoughts are valuable perspectives on our work, and we appreciate that they see our work as a jumping-off place for their own thoughts.

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