

# **RESPONSE TO: EQUITY-IN-QUALITY: TOWARDS A THEORETICAL FRAMEWORK**

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With respect for the situatedness of the eight Arab countries under discussion in Jurdak's paper - Bahrain, Egypt, Jordan, Lebanon, Morocco, Palestine, Saudi Arabia, Tunisia - and acknowledging my unfamiliarity with the education and other conditions there, I have chosen to fashion this response in philosophical terms, focusing on the theoretical underpinnings of Jurdak's argument.

The paper offers a theoretical framework – “activity theory” – as a means of elucidating the complex relationship between “equity and quality” in mathematics education. The production model of equity (which identifies the targets, objects and principles of equity and rests on an input/output metaphor of knowledge production) is limited in its conceptualizing of the interconnectedness of equity and quality in education. The activity model, argues Jurdak, widens the scope of objects of equity to include “mediating artifacts”, such as language, and other objects and distributions of labor that govern the system, such as processes of production, distribution, exchange, and consumption of knowledge. Quality in the activity model promotes a “knowledge creation” metaphor instead of an acquisition or participation metaphor. “Learning is not conceptualized through processes occurring in individual's minds, or through processes of participation in social practices. Learning is understood as a collaborative effort directed toward developing some mediating artifacts, broadly defined as including knowledge, ideas, practices, and material or conceptual artifacts.” (Paavola, 2004, 569. Quoted in Jurdak, p. 11). This theoretical approach seems promising when considering the discursive nature of learning, and when accepting the crucial role of language and representation in mediating and in part constituting the regimes of truth that are legitimated in/through schools. The question is whether this approach is the most insightful (or the most effective) for examining the intersections of equity and quality, and to what extent this approach can be operationalized to actually address the concerns we have about these intersections. Based on my reading of Jurdak's paper, this approach seems both powerful and limited in its current application.

Jurdak samples the research literature to make evident the many different ways in which differences emerge in/through education. He considers four cases: (1) differences between street vendors and students in terms of problem solving skills, (2) differences between students within the same classroom regarding attitudes and opportunities due in part to “family social milieu”, (3) differences between national curriculum based on current access to the global market, and finally (4) political and cultural differences between countries which perform in the top ten on international tests. In each case, these differences correlate to particular lived experiences of

inequity, while problematizing past notions of “quality” education. For instance, the different “cultural capital” that students might bring to the same classroom, could override (and often does) any measure of the quality of teaching, and thereby determines the student learning trajectory and later opportunities, choices and actions. The relationship between quality and equity is thus problematic, and dependent on context and purpose.

The four examples that Jurdak uses are all radically different themselves, and require close examination, and yet the strategy of collecting these under one umbrella, and interrogating them in terms of equity and quality, demands that the reader look for sameness amongst them. The reader is asked to consider the various conditions of inequity, to note the problematic or situated measures of quality, and to consider the variable nature of the relationship between equity and quality. And yet the paper aims to generate a theory that explains all four instances. Jurdak selects the term “equity” over “social justice” and in doing so, taps into a particular line of inquiry and philosophical thinking. The two terms are affiliated with different political approaches to problems of justice, and selecting one over the other indicates a particular vision of these problems. Perhaps the term equity suits the particular application he makes of the theory – that being to describe the situated notion of quality in particular Arab countries in relation to the variance of student performance on *standardized tests*. The sameness of the standardized test - the assumption that from the same test one can infer truths about radically different students – is used to further his argument. Although Jurdak acknowledges that defining quality in terms of performance on achievement tests is inadequate or “narrow” (p. 4), he still chooses to make his argument using this data.

Jurdak uses the TIMSS 2003 data to explore the theoretical implications of activity theory, but the theory seems to be burdened by this particular application, despite the compelling statistical correlations that he traces. Arguments based on student performance scores are always constrained by the implicit theoretical frameworks embedded in the testing industry. Jurdak’s analysis must rely on the categories of the TIMSS 2003 test in determining the intersections of equity and quality. For instance, he relies on the TIMSS variable “Index of Self-Confidence in Learning Mathematics” in studying the variation of student achievement. Through stepwise regression analysis he finds that this variable accounted for the largest proportion of variance in mathematics achievement between schools within each of the eight countries, indicating how important affective student-level variables are. The data about this variable, however, are obtained from the TIMSS student questionnaires in which students are asked to what extent the student “perceives that he/she usually does well in mathematics, mathematics is easier for him/her than for many of their classmates, mathematics is one of his/her strengths, and perceives that he/she learns things quickly in mathematics” (p. 15) This variable paints a particular portrait of mathematics and of student achievement. First, the assumption is that student confidence is more relevant than, for instance, other affective factors such as passion,

risk-taking, adventure, or the aesthetic. Second, the questionnaire's emphasis on confidence entrenches a particular vision of student achievement in terms of ease (how quickly do you learn it? Do you do well in it?) instead of questions about engagement (Does it challenge you? Do you strive to solve mathematical problems? Do you play mathematically? Do you question mathematical assertions? Do you argue your opinions based on mathematical analysis?), questions that might help focus student and teacher attention on the adventure of learning mathematics. The questionnaire data (and the *activity* of asking students to answer questions) contains and conveys and constructs particular kinds of subject positions by prescribing what the students are able to say.

As Jurdak explains, activity system theory is responsive to innovation and cycles of expansion (and contraction). With the mediating influence of artifacts, "A new tension between the nodes of the system will eventually lead to a new process of adaptation"(p. 11). It seems to follow that by relying extensively on the TIMSS 2003 data and re-inscribing its assumptions into the system of education research, and thereby legitimating its assumptions about mathematics learning, the system (in which we are included) is impacted in ways that may not suit the equity aims of Jurdak. In other words, if we apply the activity systems model to Jurdak's text, and consider our own inclusion in an activity system that impacts students, we have to be critical and sensitive to the ways in which our own mediating artifacts (the TIMSS data) lead to adaptations (or not) of the education system. I'm not sure if the TIMSS data is an outcome or a mediating artifact, or both, but it is circulating within the activity system of mathematics education research and the activity system of policy, and ultimately, mediates inside the classroom as well. The new system generated through the mediating influence of the artifacts is not necessarily better in terms of quality. There is no guarantee that the new system has a better quality, since the participants to whom it is responding are *not* necessarily, I would argue, the students – whose voices are barely heard through the inadequate questionnaire data. Responsiveness of a system to expand and create new activity systems that "meet the emerging needs of the community" will not by necessity improve quality, since not all members of the community will be given voice or power to speak in any given system. For instance, one could argue that the participants with the loudest voices in a system that mobilizes global education statistics are those of the policy makers and test makers. It is important to interrogate the ways our research might be serving the emerging needs of a massive testing industry.

Jurdak acknowledges that TIMSS 2003 data is modeled on the Production system. His statistical analysis is extremely insightful for many reasons, and compelling in terms of the correlations he is able to identify, although he is obliged to submit to the TIMSS categories of "teacher-level" categories and "student-level" categories when it is evident, if based only on the specific questions of the questionnaire, that it is almost impossible to disentangle these, as he points out in his conclusion. Ultimately, his analysis points to affective factors and school culture factors as contributing

significantly to school variance, which begs the question that qualitative researchers have been asking for decades – shouldn't we be following the actors? If affect and culture are the key aspects, then shouldn't we be immersed in these contexts in order to make meaning of them? Might our insight into the relationship between equity and quality be more nuanced if we supplement this statistical analysis with grounded ethnographic studies of the participants? As Bruno Latour asks, in his own version of activity theory (Actor-network theory (ANT)), might we gain insight into the emergent mechanisms and mediating artifacts of an activity by following the actors on the ground and watching closely the human details of mediation? Despite the supposed descriptive role of statistics in this current application, I am left feeling somewhat unsatisfied with the application of activity system theory to the TIMSS data. The statistical analysis produces new understanding, but it doesn't seem to need the social theory that frames it. I am left thinking that understanding activity requires additional detailed descriptions of the sort that Latour recommends: "What ANT does is that it keeps asking the following question: Since every sociologist loads things into social ties to give them enough weight to account for their durability and extension, why not do this explicitly instead of doing it on the sly? Its slogan, 'Follow the actors', becomes, 'Follow the actors in weaving through things they have added to social skills so as to render more durable the constantly shifting interactions.'" (Latour, 2005, p. 68). If we aim to understand activity, Latour suggests that the voices of the actors must be heard, and the actions of the actors traced in detailed descriptions and narratives. In terms of a theoretical framework, Latour suggests that activity is better understood through ANT, an acronym that conjures the kind of work of the sociologist, who painstakingly studies his or her subject, like a "blind, myopic, workaholic, trail-sniffing, and collective traveller" (Latour, 2005, p. 9).

## REFERENCES

Latour, B. (2005). *Reassembling the social: An introduction to actor-network-theory*. Oxford University Press.