

WORKERS' COMMUNITIES AS POTENTIAL INSTITUTIONS: A CONVERGENCE ISSUE TO ANTHROPOLOGICAL AND SOCIOCULTURAL COGNITIVE THEORIES

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This poster introduces a new presentation of the praxeological model within the anthropological theory of the didactic (ATD) and intends to show that this new model favours connections with cognitive theories inspired by the Activity Theory.

General context: the epistemological anthropology

What are the processes by which individual or local findings turn to be shared and recognized within an institution and then spread into other institutions? How do these social resources get transformed while circulating from their emergence institution to others? These are the issues that epistemology tackles.

The original notion of praxeology

ATD provides this epistemology with what is intended to be a general model for all human activities as well as for the resources to achieve these activities. This is the praxeological model $[T, \tau, \theta, \Theta]$ (Chevallard, 1999). In the case of mathematics, this model has been generally used with respect to academic praxeologies and their transposition in general education, with the following consequence: in the considered praxeologies, θ appears as composed of theoretically proved mathematical results. Such a restricted conception fails to take into account the totality of what is known about mathematical techniques in the institutions where they are employed, whether in mathematics research, mathematics education or in any professional context.

A reorganisation of the praxeological model

Castela (2011) proposes the following presentation of the praxeological model of the resources institutionally available in a professional institution I_p :

$$\left[\begin{array}{l} T^*, \tau^*, \theta^r, \Theta^* \\ T^*, \tau^*, \theta_p \end{array} \right] \begin{array}{l} \leftarrow I_r^* \begin{array}{l} \swarrow \\ \searrow \end{array} \begin{array}{l} I_r \\ I_p \end{array} \\ \leftarrow I_p \end{array}$$

This model distinguishes the category of research institutions (I_r) and supposes that one of them has produced a praxeology $[T, \tau, \theta^r, \Theta]$ (Π_r). I_r specificity is that their social function includes developing praxeologies for other institutions, basing the legitimacy of the different components on a systematic process of validation which depends on the institutional paradigm. In I_p , some subjects carry out types of tasks deriving from T , Π_r is known and recognised but the professional use has a transposition effect on its different components. It is assumed *a priori* that the transposed praxeology $[T^*, \tau^*, \theta^{*r}, \Theta^*]$ is submitted to a new legitimating process

(←) in an institution (Ir^*) implicating both concerned institutions. Finally, the model considers that Ip contributes to the technological development, producing a practical working oriented technology θ^p , empirically validated and legitimated within the professional activities. The above representation still lacks something: it does not make apparent the net of various sized institutions implicated in the praxeological institutional life, both in Ir and Ip . In the very working places, local institutions are assumed to contribute to the institutional cognitive development, whether by completing praxeologies coming from upper levels or by being the source of a new invention process initiated in Ip .

Possible connexions with research inspired by the Theory of Activity

One French school of work psychology is considered here, it has developed an interventionist approach, the Clinic of Activity (Roger, 2007; Clot & Kostulski, 2011). According to the Theory of Activity, work activity is assumed to be not only oriented toward production, but also toward the development of professional knowledge. One major specificity of this school is to consider that the development process produces socially shared resources, the so-called professional genre, variety of recommended ways of doing and ways of telling, which at the same time frames and sustains individual and collective activity. The genre retains the historical memory of the profession, it is also a living capital submitted to constant maintenance efforts to adapt to the changing working conditions. Producing and maintaining the professional genre is considered as a matter of the transpersonal dimension of work which, being socially oriented, goes past simple interpersonal interactions within local working communities. The Clinic of Activity group is generally commissioned to intervene on working contexts in crisis; its experience is that the elimination of the transpersonal is generally at the core of such crisis.

Interest of such connections

The notion of genre is related to the institutional p-level in the praxeological model, pointing to the necessity to take into account varied forms of social cognition. As for the transpersonal dimension of work, especially the critical consequences of its disappearing, it addresses the institutional approach of epistemology with questions such as: under which conditions does a working collective turn into an institution producing and legitimating praxeologies renewing the genre? Under which conditions does this development turn itself towards the transpersonal perspective and contribute to the profession's cognitive productivity? Conversely these issues may be returned to the Communities of Inquiry Theory. Goodchild's analysis of the differences between CoP and CoI (2011) appears to address the first one. But CoI research as well as other collaborative research perspectives cannot ignore the second one if their intention is to contribute to development of the mathematics teacher profession.

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