Reaction to Part IV
Teacher Agency: Bringing Personhood and Identity to Teaching Development

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The title of this book, “Mathematics Curriculum Material and Teacher Development: From Text to “Lived” Resources” is fittingly brought to a conclusion in this final part which focuses on the collaborative aspects of teacher documentation. The three chapters in this part offer a range of theoretical perspectives as well as specific practical insights to issues in developing mathematics teaching for the effective learning of students. Each of the chapters addresses a tension/dilemma for teachers: that is, the engagement of self within the collective of institutionalized practice and an exciting panorama of resources and their associated challenges.

In his seminal discussion of “self”, Harré (1998) adapts the terminology of Apter (1989, p. 75) to speak of “personhood” as having characteristics as follows:

In displays of personhood, of our singularity as psychological beings, we express “a sense of personal distinctness, a sense of personal continuity, and a sense of personal autonomy” (p. 6).

In what we read in this part we gain a sense of how teachers’ personhood, in terms of distinctness, continuity and autonomy, relates to the panorama of resources within which they make sense of their teaching role, in which they become the teacher they are. All three chapters build on Gueudet and Trouche’s Chapter 2 (Part I) to make reference to “documentational genesis”, in which genesis means becoming: becoming a mathematics teacher; becoming a professional user of resources; becoming a knowledgeable professional. In his book Communities of Practice, Wenger (1998) talks of learning as “a process of becoming” (p. 215). On the one hand, this, he claims, is “an experience of identity” (p. 215), where identity “serves as a pivot between the social and the individual, so that each can be talked about in terms of the other” (p. 145). Harré, on the other hand, sees a person’s identity “not their singularity as a unique person, but the group, class or type to which they belong” (p. 6). He sees this as being the opposite of the characteristics of singularity, distinctness, continuity and autonomy. In his terms, identity and personhood are opposites.
My brief references here to the writings of Harré and Wenger draw attention to a philosophical grounding to these chapters, which juxtaposes ideas of self, identity and agency. Harré speaks of *agentive power* as “power [of the individual] to initiate action” (p. 116). Wenger juxtaposes agency with knowledgeability, and suggests a dichotomy between theories of social structure that deny agency to individual actors, and theories of situated experience that emphasise agency and intentions, and address “the interactive relations of people with their environment” (pp. 12–13). Wenger suggests a middle ground, that of “learning as participation” which “takes place through our engagement in actions and interactions” and “embeds this engagement in culture and history” (p. 13). Documentational genesis, a term which captures the process of the mathematics teacher becoming a professional user of resources and, concomitantly, a knowledgeable professional, navigates the ground between the personhood of the teacher and the teacher’s *belonging* (Wenger, 1998) to social structures and communities in which resources take meaning. Gueudet and Trouche suggest an associated *community genesis* including five steps *potential, coalescing, maturing, stewardship* and *transformation* as distinguished by Wenger, McDermott and Snyder (2002); they write: “This conceptualization fits our objective of studying the documentation work of teachers in a collective, in describing a variety of teachers’ collectives at various steps of development” (p. 307).

Winsløw (Chapter 15) uses the concept of documentational genesis to introduce his theory of paradidactic systems; for him this concept is “clearly an enterprise that goes much beyond the individual teacher’s domain of action and responsibility”. He emphasizes that even in a context where teachers work mostly alone, peer learning and team work can be crucial factors for teachers’ development. Gueudet and Trouche (Chapter 16) write of teachers’ *documentational genoses* and *professional genoses* with particular reference to community and collaboration, drawing on Wenger’s theory of community of practice. For them the idea of teacher-in-community seems central to their conceptualization.

Visnovska, Cobb and Dean (Chapter 17) discuss teachers’ documentation work with a helpful rephrasing of the concept of documentational genesis: they write, with reference to Gueudet and Trouche, that “teachers’ documentation work includes looking for resources (e.g., instructional materials, tools, but also time for planning, colleagues with whom to discuss instructional issues, and workshops dedicated to specific themes) and making sense and use of them (e.g., planning instructional tasks and sequences, aligning instruction with the objectives and standards to which the teachers are held accountable). The products of this work at a given point in time are characterized as documents (e.g., records of the big mathematical ideas that are the overall goals of an instructional unit; a sequence of tasks along with a justification of their selection). These documents can in turn become resources in teachers’ subsequent documentation work. The process of *documentational genesis* therefore foregrounds interactions of teachers and resources, and highlights how both are transformed in the course of these interactions” (pp. 323–324).

I, therefore, consider *documentational genesis*, and the associated *professional genesis* for teachers, in relation to their involvement with and use of resources, to be fundamentally related to teachers’ agentive power and development of teaching identity.
Winsløw (Chapter 15) develops the idea of a didactic system, the basic unit of teaching and learning in school institutions (drawing on theories from Brousseau and Chevallard), to offer a threefold collaborative process which he calls a para-
didactic system. The components are the predidactic system (PrD) involving design and planning, the observation system (DoS) in which classroom teaching is observed and documented and the postdidactic system (PoS) in which the didactic system is evaluated and its design may be revised. He goes on to apply this model to examples of practice: firstly an example of Japanese lesson study and secondly an implementation of interdisciplinary modules in Danish schools. While Japanese lesson study is historically and culturally rooted, the Danish project was imposed onto the existing culture and systems and proved problematic for teachers to accept and implement. The challenge posed by the specific requirement for teachers to work in teams cut across what teachers saw as their motivation for becoming teachers.

Gueudet and Trouche expand on the ideas of Wenger and illustrate community documentational genesis in practice through the case of a teacher Pierre and his activity within the digital network Sésamath. Their case study shows how the many facets of Pierre’s documental work coalesce, mature and transform to contribute to the teacher that Pierre has become. They contrast the activity of Pierre with that of Myriam, detailed in Chapter 2. The two teachers navigate differently between the resources offered in Sésamath and their own use of these resources. We might say that their patterns of instrumentation/instrumentalisation are different, and hence also their personal agency in designing teaching.

Visnovska et al. (Chapter 17) discuss documentational and professional genesis in a project involving teachers as instructional designers – a 5-year developmental programme with mathematics teachers in which teachers developed knowledge of statistical concepts and associated pedagogical knowledge to grow into more principled modes of practice with their students. The authors emphasise the complexity of resources, including social resources, and point to key shifts in teachers’ participation in the project relate to their co-participating teachers and the pre-designed instructional sequences. In some cases it was clear that school norms influenced teachers more than project goals. It was pointed out that the teachers would not have developed the desired ways of working central to the innovation if left to their own initiative; the innovation was of central importance to teachers’ mediation of reform effort.

In all these cases, relative to the particularities of the case, we see three key dimensions, in one case, four. As Gueudet and Trouche point out, each teacher takes part in a variety of collectives, sometimes institutional compulsory and sometimes chosen by themselves. They are a part of an institution which imposes norms and expectations into which the personal activity of the teacher must fit or “align” (Wenger, 1998). They use a variety of resources of different kinds: curricular, collegial, text and Internet, classroom interaction, for example. So we see a teacher’s agency in relation to these collectives:

1. teacher as person, with social and cultural identity;
2. teacher as member of an institution, with a complexity of demands and inter-relationships;
3. teacher as operational designer drawing on a web of resources.

In the Visnovska et al. study, we see also a fourth dimension:
4. teacher as participant in an innovation driven by external designers.

These dimensions are of course deeply inter-related, but we can see different emphases in the activity portrayed in these chapters. For example, we might see Japanese lesson study as emphasizing points 1 and 2, the Danish reform as emphasizing 2; Myriam and Pierre as emphasizing points 1, 2 and 3, and the teachers in the Visnovska et al. study as emphasizing points 1, 2 and 4.

In making these observations and thinking about theory and practice as portrayed here, I have unsurprisingly been challenged to draw my own recent developmental research with teachers into this complexity of teacher agency. In the project Learning Communities in Mathematics in Norway, didacticians from the university formed communities with teachers in schools from lower primary to upper secondary to develop inquiry-based activity with students in classrooms and inquire into the teaching design process that this involved (Jaworski, 2008). The project sought to create communities of inquiry between didacticians and teachers to encourage teacher agency in developing inquiry in schools (in collaboration with colleagues) and in mathematics in classrooms with students. Didactician agency was also a central focus of research. We analysed relationships between teachers and didacticians, recognizing the knowledge and experience brought by each group as a resource for the other. We extended Wenger’s notion of alignment, which he characterizes (along with engagement and imagination) as one of the key elements of belonging to a community of practice, to one of “critical alignment” as being central to a community of inquiry. Essentially, critical alignment through inquiry allows questioning of established practices, their norms and expectations, while aligning institutionally with them.

Unsurprisingly, there were many issues arising for teachers and didacticians in this collaboration, in some cases leading to tensions and potential conflict. We found activity theory, rooted in Vygotsky and Leonte’v, as detailed also by Gueudet and Trouche, valuable to analyse situations and make sense of the tensions in relation to the full sociocultural complexity of institutions, project and relationships. Gueudet and Trouche say little about how they have used activity theory and I do not have the space either to do so here. However, it seems to me to be well worth further consideration as to how activity theory can throw light onto the complexities inherent in these projects. Such consideration can illuminate teachers’ professional activity and make sense of what we see and experience in classrooms against the panorama of practical and theoretical possibilities on which this book throws light.

I end with a return to notions of teacher agency and its relation to concepts of personhood and identity: that is, bringing personhood and identity to teaching development. I have been struck in these chapters by the different examples of how teachers’ “personal distinctness, a sense of personal continuity, and a sense of personal autonomy” (Apter, 1989, cited in Harré, 1998) sit alongside teachers’
navigation of resources within social and cultural settings in which they develop identity. What we see in classrooms has to be interpreted in this full sense. I see the concept of critical alignment as offering teachers, as well as the didacticians who work with them, a way of dealing themselves and with their colleagues knowingly with the issues and tensions involved.

References


