

LEARNING (AND RESEARCHING) AS PARTICIPATION IN COMMUNITIES OF PRACTICE

Madalena Pinto dos Santos

Universidade de Lisboa

ABSTRACT

In my contribution to this panel I will bring elements from recent research I conducted (Santos, 2004) in Cape Verde aiming to clarify the meaning of learning as participation in social practices – “learning as participation in the social world” (Lave and Wenger, 1991, p. 42). But as my main interest is learning in compulsory education (in Portugal until 9th grade) I looked for an empirical field that allowed me to describe the practice developed by one group of young people involved in activities that are not seen (by the youngsters and by the social world around them) as a suitable profession for adults. The object of study was the participation of youngsters in an activity that they approached as something that allows them to fulfill immediate needs and not seen as a way of getting ‘a job’. In this sense, the activity was not connected to any sense of ‘becoming’ a certain kind of person. I identified a group of youngsters in Praia (the capital of Cape Verde) within a practice – selling newspapers in the street. The boys involved in this practice are called ardinás. For me – a mathematics teacher looking for a deeper understanding of the learning of mathematics in compulsory education – the mathematics-in-use was the ‘natural’ entry point to make sense of the practice and to identify the learning emerging from ardinás’ participation.

INTRODUCTION

The theme of the panel, and specially the sub-title given, was something that pushed me to look for a focus for my contribution. Therefore, some moments of my research were flashing back, and in re-viewing them some questions were brought to the fore:

1. Are we taking of tensions and conflicts between what or who? Lived, experienced by whom? What is being learned?
2. Inclusion and diversity of what, of whom, in what? Who decides about it?
3. Opportunities to whom? And what for?
4. How and what for is mathematics present in all this problematic?

Although I will not address all these questions, I feel that they were always present throughout the reflection I share here.

A. MAIN LINES OF MY RESEARCH

In this section I present, very briefly, the elements of the theoretical background used in order to situate the ideas to be discussed. According to Vann and Bowker (2001), “practice is an emergent relation between the ‘real work’ and the ‘designed organization’” (p. 16). As I see such relation constructed (established) by the people-in-action, one fundamental step in the direction of understanding how the *ardinas* participate in social practices, was to characterize what was going on (and emerging) among them as *people-in-action*. This took me to the concept of *community of practice*.

I collected ethnographic data in two periods of the newspaper selling activity that one large group of *ardinas* developed in the streets of Praia. This was a group of boys between 12 and 16 years old, with a variety of schooling backgrounds ranging from 8th grade to none. The *ardinas* sell the newspapers in the street - the only way they are sold in that city. Being with the *ardinas* all day in two different periods of time, I was able to identify similarities and differences in various moments of their selling activity - changes in the group and in the group dynamic as well as in the institutionalised organizational modalities of the integration of newcomers.

To be able to say if the group of *ardinas*-in-action constituted a community of practice demanded the analysis of the social practice the *ardinas* developed together during their everyday participation in selling newspapers – the activity-in-setting – through the observation and description to make sense of it. This orientated my efforts to recognize (or identify) elements in the *ardinas*’ social practice in order to describe it as the source of coherence of the community. Wenger (1998) talks of describing the “dimensions of the relation by which practice is the source of coherence of a community relation” (p.72) in terms of mutual engagement, joint enterprise and shared repertoire. The *ardinas*’ participation in the selling practice ‘put’ them in interaction with (in action, in relation with, and within) the *social world* where the newspaper selling was situated or of which it was a part.

I followed very closely some *ardinas*’ trajectories, from their first day in the activity until full participation, and I identified changes in their modes of participating, in their calculating procedures, as well as in the various modes of belonging in action and in transformation. Such focus on the *ardinas*-in-action and their practice enabled me to understand and describe how their modes of calculating-in-action took shape and to recognize the situated nature of their mathematical thinking-in-action. Those modes were quite different from the school procedures but were part of their shared repertoire even if they were not made explicit among themselves within the ‘ordinary’ everyday selling activity nor were they explicitly taught to newcomers. They never speak about the calculation procedures they used in different moments of the selling activity between themselves or the man to whom they pay for the newspapers sold. They spoke about their calculations only with me. The wish of being and acting as good informants was the *ardinas*’ ‘reason’ to describe those

procedures or make them visible in several ways, then they were explicit objects of the talking we developed.

I made considerable effort to:

- describe the *ardinas*' practice in terms of relations between the social world, the activity-in-setting and the people-in-action;
- understand the group of *ardinas* in their everyday participation of selling newspapers as a community of practice.

These helped me to clarify the situated nature of the thinking and acting, particular to *ardinas*-in-action, as well as the meaning of the learning of such particular ways as an integral part of the learning of being an *ardina*, which involves a competence, a belonging and an identity.

B. SOME SNAPSHOTS IN *ARDINAS*' LIFE

In this section I will share two small stories in order to bring to the fore the socio-cultural world where the *ardinas* selling activity is taking place. From them I will focus on some tensions and conflicts experienced by some *ardinas* in their selling activity and by myself living with them the research process. With this, I hope to bring to the discussion the relation between *inclusion* (of what and whom) and *diversity*.

The *ardinas* are, in general, boys from poor families but they are not generally considered 'street children'. In fact, selling newspapers, among other available activities that enable poor children to contribute some money to their families, was the considered quite positively in Cape Verde. Traditionally the *ardinas* came from (recruited) a particular borough of the city, although in the first period of data collection (and for the first time in the history of *ardinas*) a group of 12 boys came from a rural area. In their village (a very poor one) it was natural for the children to help the family through engaging in fishing or agriculture, although it was not usual for young boys to go out of the village to gain money for their families. This was seen as an explicit sign of the families not being able to fulfill the needs of their children. So, the social value for the participation of boys in the selling activity was not equally considered among the two groups of children (the rural and the urban).

The two stories will illustrate how learning to be competent in the selling activity relates with belonging to the *ardinas*' community of practice, and how the learning emerged from their participation in such community overlapped and gave shape to their use of mathematics.

Competence may involve tension between various Belongings

Zeze is a boy from the village who sees the participation in the selling activity as a good opportunity (an acceptable ‘excuse’) for stay one night with his father living in the city. In order to enable this proximity, he needs to be a non-competent seller, that is, he needs to sell very few newspapers in order to justify the need to come back another day. The group of boys coming from the village and the man who delivered the newspapers were aware of Zeze’s need, but not the group from the city. To this group, he was seen as an *ardina* that was too slow, that did not learn how to be a competent *ardina* and they complained about it. They frequently argue with the man in charge that Zeze should not receive newspapers to sell, that he should give up the selling. The man in charge, however, accepted the weak engagement of Zeze in the selling.

The *ardinas* from the village had a kind of ritual when they came back to the village. They joined in the small coffee shop (the only one where the men meet together at the end of the day) and they used part of the money they earn in the selling (the part the family allows for their own expenses) to buy candies or drinks for their friends. Those moments were very important to change the way involvement in the selling activity was considered in the village. When Zeze stayed in the city with his father, he was not able to share in this collective moment; he was not contributing visibly as an active partner on such transformation.

Gradually it was possible to see him become more involved in the selling activity, more engaged with others and more accepted as a competent *ardina*; he was now finishing the selling with his colleagues and coming back to the village with them.

What began as useful to exhibit as a non-competence – to refrain from selling and keep newspapers to sell the day after (and stay with his father) – become an obstacle to the sharing of relevant moments with his colleagues to sustain their belonging to the village community. To stay a few hours with his father would not really change his everyday situation in his family, as he lived mainly with his mother, but could put in risk his image as an *ardina*, particularly the part of such identity that involved the regard of the people from his village.

It was useful to participate actively with the others in the re-building of their image – to be seen as boys engaged in an activity outside the tradition but that did not put at risk their belonging to the community. His need to continue to negotiate his belonging to the two communities was visible and explicit within the village and the sub-community of *ardinas* colleagues from the village. But in the *ardinas*’ everyday practice, with the urban part of the group, those needs were not usual. In the history of the practice the acceptance of youngsters as *ardinas* was ‘natural’ and it was a socially valued way of contributing to the family. So, Zeze’s condition (the need to organize his participation in a way that allows the conciliation of conflicting belongings) within the global *ardinas*’ community did not find a social space for

being spoken about, and without the colleagues and the acceptance of the man in charge, it was not been possible for him to pursue his evolution as *ardina*.

There was a tension between the socially defined competence in the community of practice of the *ardinas* and the experience of it by Zeze. To participate in the selling and to be competent in it was not detachable from his life outside the strict time of the selling and he risked being unsuccessful if he was alone. To participate in this activity has attached to it two other dimensions that relate closely to identity dimensions – to be a son and to be a rural boy from a village with particular social and cultural values. I wonder what would happen if it was not possible for him to develop as an *ardina* without being able to negotiate/reconcile his other ‘belongings’ (family and living community) in a group that supported him.

This brings up the discussion of *inclusion and diversity* (of identities, of values, of knowledge). To be able to develop ‘belongings’ far away from the ones ‘natural’ to our socio-cultural heritage can be experienced in a very conflicting way and usually introduces tensions in our lives. The inclusion or exclusion is not totally and completely defined inside the strict temporal and spatial boundaries of a practice. However, the organization designed for that practice and the one that emerges from the everyday participation of the members of a community of practice, may allow (or not) the expression of diversity. Inherent to the visibility of differences it is the valuing of the various modes of belonging and of the various interests in presence. Particularly to the case of young people, the openness for a space and time to explore a new belonging without putting at risk some of their multi-membership (a fundamental characteristic of identity) may provide them with a learned experience of agency. In this way the youngster may find out relevance for other memberships and may see them as empowering, that is, they may experience it as a way of enlarging their possibilities of choice and not as restricting or learning to de-value their own roots and knowledge.

Participation, reification and the meaning of experience

Trying to understand the practice of *ardinas* required me to be aware of the stories they shared and talked about, and to identify the situations in their daily interaction where it was usual for them to speak about facts and moments of their practice. I identified the talking and thinking repertoire developed by the *ardinas*, shared and learned through participation.

For the second story I will bring two boys – Toniko (from the village) and Ntoni (living in the city). Toniko had a very limited experience in school - he left school six years before, during the 2nd grade - and he had some difficulty in understanding the bills. Therefore, sometimes he lost money in the process of giving change to customers. Ntoni was at the 6th grade and he was a newcomer in the selling.

During the selling it was usual to see some *ardinas* checking the number of newspapers against the money they had. This was always a lonely activity, but they

accepted well my presence in those situations, video-recording what they were doing and asking them to explain what they were doing and how they were thinking. In those moments their role as informants was clear, and they were aware that they were helping me in the research process. I realized that all the *ardinas* developed common patterns for counting money and for calculate newspaper values. They used multiples of 8 to calculate with newspapers and multiples of 100 for the money.

It was surprising for me to notice that boys like Ntoni with more years of school life described or explained their thinking by giving some sequences of numbers and not nominating the procedures they use. For instance, when they explained me how they found what they earn in selling 43 newspapers they did not say “*I did a multiplication*” but they would say “*cause 8 are 100\$, 16 are 200\$, 32 are 400\$, 40 are 500\$ and more 3 does 537\$50*”. However, boys such as Toniko, with very few years of schooling, tried more frequently to describe it using words such as ‘multiplication’ or ‘adding’, usually not corresponding to the procedure they really used. The selling practice did not develop (or use) words for naming the calculation procedures. Those boys could have had access from their schooling to the words of school mathematics but they ‘learned’ better how much stronger was the social value of schooling compared with being an *ardina*. I belong to that universe they identify with the school (a woman, speaking Portuguese) and so they act as they imagine I would recognize them as ‘competent’. Why did the boys like Toniko deny for me their ‘natural’ way of calculating in the practice? Why did they feel the need to ‘translate’ their way of thinking in words from another ‘world’? And what made the others able to assume a particular way of calculating, the particular and typical way of thinking in the selling activity?

It is relevant to note that the *ardinas* who attend school at the time they were involved in the selling, said to me they felt the need to hide from their teachers the fact that they were selling newspapers. On the other side, Toniko was the boy that the man in charge of *ardinas* trusted more for anything that could involve a great responsibility with money or values. His ability for dealing with numbers and calculations, or for counting money was not as relevant as his trustful behavior, that is, as his respect for authority.

So we have to ask here, what or who is being excluded from what? Who values and what for, the school and the mathematics?

C. RE-ORGANIZING THE QUESTIONING

I will finish this paper by throwing out some fundamental questions that were posed for me in thinking about the theme. The subtitle for this Plenary Panel is “**Working for inclusion and diversity in mathematics education**”. ‘Inclusion’ and ‘diversity’ are words that push me to think also of their opposites. Is mathematics education, a frame of activity that, for me, includes simultaneously school mathematics teaching and researching mathematics teaching and learning, been assumed (lived, presented)

as exclusive and uniform? Who, what and what from, is such mathematics education excluding? What does it mean to be excluded, to be different? Who has the opportunity and the power to include and to exclude?

In what conditions are the inclusion and diversity issues of young people, knowledge and researchers coming to gain relevance to “our” eyes? What are the “communities” we value as the ones to which we think these issues have relevance, and how do we see our role in that discussion? What are the ‘belongings’ that are contributing to the way we are being “people-in-action” in the research and teaching field of mathematics education? What are the tensions and the conflicts that arise when we are taking these issues seriously? Why (and what for) are we valuing to spend time, energy, and imagination to work on these issues? With whom are we sharing stories and what for? There are the fundamental questions this theme raises for me, and which I leave for you to consider.

References

- Vann and Bowker (2001). Instrumentalizing the truth of practice. *Social Epistemology*, 15(3), 247-262.
- Lave, J., and Wenger, E. (1991). *Situated learning, Legitimate peripheral participation*. Cambridge, USA: Cambridge University Press.
- Santos, M. (2004). *Encontros e Esperas com os arduos de Cabo Verde- Aprendizagem e Participação numa prática social*. Unpublished PhD Dissertation, Faculdade de Ciências da Universidade de Lisboa.
- Wenger, E. (1998). *Communities of Practice: learning, meaning and identity*. Cambridge, USA: Cambridge University Press.

