Crossing boundaries
Harnessing funds of knowledge in dialogic inquiry across formal and informal learning environments

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Many critical voices have been expressed towards formal education and its practices (Hubbard, Mehan, and Stein, 2006; Resnick, 1987; Sarason, 1993; Tyack and Cuban, 1997). The critics maintain that formal education does not acknowledge enough those experiences and that agency that learners bring to school from other contexts, such as from their homes, after-school clubs, museums, libraries and science centers. Further, formal education is said to be unable to exploit fully cultural resources, i.e. funds of knowledge (Gonzáles, Moll, and Amanti, 2005) of communities surrounding schools—their expertise, knowledge, and artifacts—and utilize these in a systematic manner. Critics continue that formal education should realize and acknowledge in more visible ways the fact that learning takes place everywhere. Learning in other contexts may even be more important or make more sense to the learner in her daily life than what is learned in the formal setting of the school. In fact, a major part of children’s waking time activities take place in non-school settings (Bransford et al., 2006).

In addition to the importance of acknowledging learners’ out-of-school experiences in formal education, there is also a clear need to understand better what learners take with them from the school to other settings (Pugh and Bergin, 2005). Are we successful as educators in providing our students with opportunities to construct experiences, attitudes and knowledges that are usable, helpful and productive outside the school? Indeed, often times learners are left to navigate in different settings of learning without adequate support and without the recognition of the importance of communication and social interaction as vital mediators of learning. This argument unfortunately applies to both formal and informal settings of learning. There is clearly a need for the development of pedagogical models, solutions and activities that can best support learners’ meaningful and productive transitions and participation in formal and informal settings. The funds of knowledge developed in one setting should become resources in the other. This is likely to increase learners’ agency and active engagement in learning the stretches beyond settings and contexts.

Our chapter discusses a study that investigates the practice of dialogic inquiry within a classroom community whose formal learning spaces were extended to more informal settings of learning, namely to a technology museum, a science center and a forest. The study illuminates the ways in which the cultural practices of dialogic inquiry, its norms, values, and discourses, were talked into being in these multiple learning spaces that were aimed to enrich the students’ learning experiences, and promote their agency in learning, as well as to support their meaning making and knowledge generation.
Our study uses a chronotopic analysis (Brown and Renshaw, 2006) of students’ dialogic inquiry practices. Here, the analytical focus is on the agency of learners as they actively shape the space-time contexts of their learning environments and relationships. Our analyses provide insights into the ways in which learners harness as well as contest past, present and future space-time contexts in their joint negotiations. The results of our study suggest that a dialogic learning culture can provide students with cultural bridges to participate meaningfully and powerfully in learning spaces beyond the classroom. These bridges are vital in helping students to develop boundary-crossing competencies to bridge the gap between diverse learning contexts and to harness the funds of knowledge they generate within and across them.

**Boundary-crossing competence**

There exists a body of research on learning situated in non-school settings (Bransford et al., 2006). For example, we know a great deal about how aspects of peer groups and families affect educational outcomes (see e.g. Phelan, Davidson, and Cao, 1991). Yet, we know little about how these worlds combine in the day-to-day lives of diverse learners to affect their engagement with school and life in general. Prior research on learning in different contexts has often focused on settings as distinct entities. At present, there is very little systematic and longitudinal educational research on understanding how, why and what kind of transitions students make as they move across different contexts of learning (Bransford et al., 2006; Walker and Nocon, 2007), and how they utilize their funds of knowledge: what, why and how students transfer (bring to, take from), and adapt whilst moving across contexts.

Previous work within the sociocultural framework of learning (Vygotsky, 1978) points towards promising lines of research. According to Greeno (2006): the competence to function in multiple contexts is developed whilst students are positioned in activity systems where they are framed as authors of their own learning. It is hypothesized that this strengthens students’ agency, that is, gives them a possibility to learn to act authoritatively and accountably (problematising and solving issues), and to build a strong participatory identity and ownership of learning. Children do not merely react and repeat given practices, but intentionally transform and refine their social and material worlds as they confront particular challenges (Emirbayer and Mische, 1998). In addition, to become an agent one must be treated as if one can do something of one’s own volition.

The second line of sociocultural research points to the idea of connecting schools to large cultural networks (and vice versa), in order to exploit fully the cultural resources available, i.e. funds of knowledge (Gonzáles, Moll and Amanti, 2005). Utilizing funds of knowledge and collaborating between different contexts calls for participation in shared spaces. Our working hypothesis is that, whilst working on the shared spaces of knowledge funds, one develops and learns to master a set of discursive (symbolic, conceptual) and material tools that can be adopted, evaluated, questioned, modified, and created across contexts.

Working with funds of knowledge leads us to consider the third line of sociocultural research, namely, research on boundary objects. This line of research gives us ideas to analyze and develop inter-organizational tools for making transitions between contexts (Star and Griesemer, 1989). As Star and Griesemer (1989: 393) frame it: “Boundary objects are objects which are plastic enough to adapt to local needs and the constraints of several parties employing them, yet robust enough to maintain a common identity across sites.” We assume that learning to build and work with boundary objects will advance humans’ and communities’ competences for crossing the boundaries of different contexts.

**Dialogic inquiry as a potential boundary object?**

The proponents of the idea of teaching and learning as dialogic inquiry have been motivated to convert the culture of formal education into authentic “communities of practice” (Lave and Wenger, 1991) in order to promote the values and goals behind the participatory pedagogy (Kovalainen and Kumpulainen, 2005, 2007;
In this pedagogical approach, stress is placed on multiple positions of authority and identity, promoting negotiation and dialogue for the social construction of knowledge and understanding.

Although there is a widespread interest towards enhancing dialogic inquiry in contemporary classrooms as a medium for participatory pedagogy, several studies have also suggested that fostering genuine student engagement in productive discussions is a highly demanding task (Lipponen, 2000; Polman and Pea, 2001; Engle and Conant, 2002; Scott, Mortimer and Aquiar 2006). The multidimensional nature and the flow of classroom interaction require specific sensitivity as well as practical pedagogical know-how from the teacher to follow and respond to various lines of inquiry (Nathan and Knuth, 2003; Scott, Mortimer and Aquiar 2006). The potentiality of dialogic inquiry practices in supporting students’ active and productive engagement while they participate within and across different settings also requires further exploration.

The learning culture of the classroom community with whom we have been collaborating as part of our research is embedded within a dialogic inquiry approach, with a heavy emphasis on the development of students’ communication and collaboration skills. In particular, the classroom community has systematically promoted students’ engagement in exploratory talk (Dawes, Mercer and Wegerif, 2004; Mercer and Littleton, 2007) across disciplines and subject areas.

In our chapter, we are interested to explore the potentiality of the dialogic inquiry approach as a boundary object, i.e. as a supportive cultural bridge, to support learners’ agency, and active engagement in learning as they transit and participate in formal and more informal settings of learning as a part of their educational program/curriculum activities. We believe a chronotopic analysis can work as a powerful resource in our study to reveal the ways in which dialogic inquiry practices can mediate students’ agency and active engagement in learning across contexts.

**Learning as participation**

In the wide framework of the sociocultural tradition, human activities are seen as socially mediated and, thus, learning is seen more as a matter of participation in a social process of knowledge construction than as an individual endeavor (Vygotsky, 1978). Knowledge emerges through the network of interactions and is distributed among those (humans and tools) interacting. As stated by Lave and Wenger (1991): learning is a process that takes place in a participation framework, not in an individual mind. By emphasizing both processes of enculturation and transformation, we are positing an agentic learner whose capacities are afforded and constrained by the cultural tools they can access within their social setting. Culture itself has been theorized as a shared way of living within communities that is continuously being reconstituted through the use (invention and reinvention) of cultural tools, technologies, artefacts and concepts (Gonzáles, Moll and Amanti, 2005). In a sociocultural framework, learning is not just a matter of epistemology, but also a matter of ontology, the development of identity and agency (Packer and Goicoechea, 2000).

Following this line of thought, the conceptual framework of our research work is embedded within the sociocultural, as well as ethnographic and sociolinguistic (i.e. interactional sociolinguistics) perspectives that all view the context of learning as a cultural site of meaning in which norms, values, rules, roles, and relationships are socially constructed into being in the local interactions of the community (Bowers, Cobb and McClain, 1999; Castanheira, Crawford, Dixon and Green, 2001; Cole, 1996). The socially established cultural practices of the learning environment become evident and are continuously reconstructed in the social life of the classroom community, reflected in the legitimate ways of participation and communication (Wells, 1999; Wenger, 1998). The local, moment-by-moment classroom interactions, thus, signal what counts as learning, participating and communicating. The commonly shared and patterned ways of interacting in the classroom community can be regarded as both providing and also limiting the access of classroom members to particular opportunities for learning (Castanheira et al., 2001; Kantor, Green, Bradley and Lin, 1992; Nathan and Knuth, 2003).
In this study, participation in the interactions of the classroom community is defined as a socially constructed phenomenon. The participatory positions constructed by and for each individual in the classroom community are made visible in the interactions and actions members take, what they orient to, what they hold each other accountable for, how they respond to each other, and how they engage with, interpret and construct meaning from ongoing interactions (Castanheira et al., 2001; Stevens and Hall, 1998). The participatory positions of the students cannot be viewed as stable and fixed, which can be identified across different social contexts. Rather, the nature of participation in classroom interaction is a dynamic and locally established process that is being constructed and reconstructed within the community. Being a legitimate member of a classroom community, then, means understanding and engaging in joint interactions in ways that mark membership in the community (Rex, Green and Dixon, 1997). In this process, individuals may also display actions that indicate their membership with other social groups that they are part of (Bloome and Egan-Robertson, 1993; Wertsch, 1991). Thus, when talking about participation in the interactions of the classroom community, it is important to recognize the flexibility and possibility of changing one’s position: changing even within one community or social group.

To conceptualize participation in classroom interaction as socially constructed is to understand that the participatory positions of classroom members are both a product of and a tool for the community. That is, the interactive practices constructed and made available to members constitute participation as a situated process. Moreover, the participatory practices of the classroom and the positions that individuals take during the practices develop and change at the same time as the community itself develops. Thus, the participation opportunities and possibilities can be regarded as serving both the collective and the individual needs (Lima, 1995). Classroom members are afforded and sometimes also denied access to particular interactions within the community. The development of the individual’s repertoire of participatory skills in classroom interactions is, consequently, dependent on the kinds of opportunities she or he has access to and which opportunities he or she takes up during the joint activities of the classroom (Alton-Lee and Nuthall, 1992, 1993; Castanheira et al., 2001; Floriani, 1993; Heras, 1993).

The analytic focus of our chapter is on the culture of a specific classroom and the situated identities and agency of the students whose dialogic inquiry practices are described and analyzed while they move across settings. The culture of the classroom is described in terms of patterns of engagement in everyday tasks and activities, accepted ways of talking and interacting with others, and selective deployment of symbolic, technical, and concrete tools. By agency, we refer to the idea of learning that entails acting authoritatively and accountably, the ability to transfer knowledge and skill across contexts (Greeno, 2006). Identity (who am I, who I want to be), we hypothesize, is continually negotiated and renegotiated in the processes of participation, and is closely related to the development of agency.

Methodological principles

The empirical study that we draw on in our chapter belongs to a larger program of research that investigates the developments of students’ boundary-crossing competences across formal and informal settings of learning. This research program is committed to make four contributions to the previous work on transitions across contexts. First, we conduct longitudinal and systematic educational research on understanding how students and teachers make transitions, and what kind of transitions they make, as they move across contexts: what, how and why they bring to, take from, and adapt in transitions between contexts (Bransford et al., 2006). Second, we make a methodological contribution by exploring the transitions at individual, collective and inter-organizational levels. Here, we refer to the investigation of participants, i.e. children, teachers and museum and library pedagogues while they engage and participate in educational activities across the settings. Third, we aim to develop models and best practices of participatory pedagogy for schools and for non-school institutions to bridge the gap between contexts and to harness funds of knowledge. Fourth, we
take seriously children’s own learning experiences and their endeavors in organizing their own learning in these transitions.

The methodological framework of our study is grounded in the ethnographic approach. In this approach, culture such as the culture of a classroom is seen as a situated resource—a fund of knowledge and a repertoire of practice and competence—that learners draw upon to make sense of their social and material world and to participate in it. Rather than treating culture as a container, as an independent variable that influences learning, ethnographers have treated culture as an interpretative and localized meaning-making process that enables participants to engage in different collective activities (Spindler, 1974).

The basic investigative in our research is the combination of a variety of qualitative methods in order to provide a multifaceted and comprehensive picture of the phenomena (see Kang and Patrick, 2002). In our research, we draw on the sociocultural, ethnographic, sociolinguistic and discourse analysis, as well as critical perspectives. Further, various units of analysis will be used. One special focus is to combine micro- and macro-level analysis to better understand the complex, reciprocal and co-evolving nature of individual, communal, and organizational development and mastering of the multifunctional and transferable competences. For that reason, we use a variety of sources in data collection: ethnographical observations (videotaped, audiotaped), interviews, and artifacts produced by the participants.

**Chronotopic analysis of dialogic inquiry practices**

In the present study, we have applied a chronotopic analysis (Brown and Renshaw, 2006) to the dialogic inquiry practices of the classroom community in order to make sense of the nature of the learners’ agency as they shape the space-time contexts of their learning environments and relationships. In doing so, we shall illuminate the ways in which learners harness as well as contest past, present and future space-time contexts in their joint negotiations. This, we believe, can provide us with evidence of the potentiality of dialogic inquiry to act as a boundary object or, in other words, as a cultural bridge that can help students to develop competencies to bridge the gap between diverse learning contexts and to harness the funds of knowledge that they generate within and across them.

Our analysis of the dialogic inquiry practices of the classroom community has been guided by the work of Raymond Brown and Peter Renshaw (2006) who applied a chronotopic analysis to investigate collaborative practice in the classroom and the role of students’ agency in it.

The concept of chronotope can be traced back to the work of Bakhtin (1981): who defines the spatio-temporal matrix as being produced, shaped and reshaped by the discourses of the participants as they relate to spaces and times beyond here and now (Brown and Renshaw, 2006; Hirst, 2004). In his work, Bakhtin captures the temporal and spatial situatedness of human actions.

The chronotopic analysis provides a tool to capture students’ situated and dynamic participation in different settings of learning mediated by the interaction of past experiences, ongoing involvement, and goals that are intended to be accomplished (Brown and Renshaw, 2006). In viewing the processes of learning as relational and transformative, chronotypes can be defined as creative spaces in which students’ agency and identities are negotiated. It is these time-space relationships and students’ agency that we are interested to explore as the classroom community moves both physically and psychologically to different spaces and time scales in their interactions.

**Classroom community**

The empirical study that we draw upon in our chapter has been carried out in a comprehensive school setting (grade 3) in the metropolitan area of Helsinki. The formal learning spaces of this classroom community were extended to more informal settings of learning, namely to a technology museum, a science center and a forest.
The participants of this study were 18 third-grade students from a Finnish elementary class, and their teacher. Of the 18 students, nine were boys and nine were girls, aged from 9 to 10 years old. The students were a representative sample of children in Finnish society in terms of socioeconomic background. Unique to this classroom was, however, the practice of working and acting as a community of dialogic inquirers (Wells, 1999), as evidenced by the pre-study observations of the classroom community in different subject domains as well as interview data and informal discussions with the classroom teacher.

The classroom teacher could be described as an expert teacher who has continually developed his professional competence by studying and researching educational sciences. The teacher’s pedagogical thinking has been influenced by the sociocultural approach, namely the Thinking Together project (Dawes, Mercer and Wegerif, 2004; Mercer and Littleton, 2007), which he has actively applied with his classroom to provide students with better opportunities to communicate, collaborate and learn. The instructional activities applied by the teacher whilst working with the students on academic tasks are mostly collective discussions and small group activities. In sum, in this classroom a heavy emphasis was placed upon social interaction and discourse as tools for learning and thinking.

Results

The chronotopic analysis of dialogic inquiry practices reveals the dynamic and hybrid nature of social interaction within the classroom community as they participate in different settings of learning. The analysis illuminates learners’ agency as they negotiate and shape the space-time contexts of their learning environments and relationships. Below, we share and discuss five transcripts of students’ dialogic inquiry practices in order to illuminate the ways in which learners harness as well as contest past, present and future space-time contexts as well as their relationships with one another and with knowledge in general.

The interplay of time and place in dialogic inquiry

In this transcribed example the classroom community is collectively exploring stones as a part of their curriculum activities. In addition to school-based activities, the project on stones has involved visits to a forest, a science center and a technology museum. The role of the teacher as a guide in helping students to navigate in the past, present and future (Emirbayer and Mische, 1998) is powerfully demonstrated here. The teacher initiates the episode by asking students to recall their experiences of the science center and its stone laboratory. In doing so, he refers to the shared history of the learning community. A student, Jimi, responds to the teacher’s invitation and he shares his investigations in the countryside about the weight of different types of stones. The teacher builds his next turn on Jimi’s contribution. By referring to Jimi’s idea, “Now this is interesting”, the teacher is crediting Jimi’s authority by recognizing his contribution as valuable for the learning community. Then the teacher visits the future with the classroom in encouraging the students to use their knowledge later on (in the future) to investigate and measure stones in a similar manner in the forthcoming visit to the museum of technology. The excerpt shows that, whilst responding to the demands of dialogic inquiry, students must reconstruct their view of the past in order to create future-oriented actions of inquiry.

Excerpt 1

TEACHER: Hey, how do you recognize a lodestone, well, there are probably lots of ways, remember when you were at the museum, you studied stones, and there you did, you studied conduction of electricity, does this ring a bell? Then there was, Jimi, do you want to say something, about this topic directly? Jimi: (unclear) for example a lodestone is heavier.
TEACHER: Okay.
JIMI: For example, I've in the countryside, limonite, if you have a limonite the size of a fist, then it probably weighs the same as a regular stone three times that size, you can tell by the weight.
TEACHER: Now this was interesting, because when you go to the museum of technology, you can try, there's three different kinds of stones, one of which is lodestone, they're the same size, and you have a scale, so you can test if it's true what Jimi says, we'll see there, that might be one way.

Contesting authority and knowledge in dialogic inquiry

The second example highlights the ways in which the classroom community collectively explores a statement that one of the students, Roope, had taken up from their visit to the museum of technology. The guide in the museum had informed the class that money is made from wool and not from paper. Roope found it important that this piece of information be collectively discussed back in the classroom. The teacher valued Roope's initiation and he gave Roope a space to realize and lead a collective discussion on the matter. In doing so, the teacher appears to leave his expert's role, and shares the authority with the students. Roope's position, especially, is expanded. His is put in a position where he has an increased possibility to learn to act authoritatively and accountably. This type of positioning of students appeared to set up a lively and multivoiced discussion. What is notable also in this extract is the way in which a student, Saara, contests the claim of money being made from wool. She also convincingly justifies her argument by referring to her experiences at home. In all, this episode demonstrates reasoning and argumentation by the students, evidencing their active engagement and agency.

Excerpt 2

ROOPE: Well there, when we were at the museum of technology, the guide said that they don't make money from paper, but from wool.
TEACHER: Roope is the chairman now, does anyone want to comment on this?
SAARA: I don't believe that!
TEACHER: Put your hand up, and Roope will give you your turn.
ROOPE: Saara?
SAARA: I can say that, even if it is scientific, I don't believe that.
TEACHER: Ok, does anyone else want to comment?
ROOPE: Kimmo?
KIMMO: Yes, it can be true, if they put it into some kind of machine, and the machine makes them.
ROOPE: Exactly, you can see, if you look really closely, you can see some of it.
KIMMO: Exactly, just that.
ROOPE: Aaro?
AARO: Well, I think they make it, well, maybe out of wool, I'm not sure.
SAARA: I don't believe it, whoever the guide is.
ROOPE: Kimmo?
KIMMO: Some kind of machine makes it, just like they make money with machines, too.
ROOPE: Yes, it's the same, in a way, made of wool completely, it's not paper.
TEACHER: I have something to say on this topic.
ROOPE: Teacher?
TEACHER: Yes, relating to this, could someone tell me why they might make it out of wool instead of paper, even though it might be easier just to make it out of paper, with a photocopier?
KIMMO: Roope, you are the chairman.
ROOPE: I know, it lasts longer, from what I hear, because money circulates a long time, so if you buy something from the store, pay with money, then it circulates, they give cash back to someone who buys something else with it. So it needs to be durable.

ROOPE: Pauliina?

PAULIINA: Yeah, it’s probably also because it’s more durable, because if it was just paper, anybody could just take the money and put it into a copying machine, and they could just make copies very easily, because it was just paper, and you copy it. It would be very easy that way. (unclear).

ROOPE: Saara?

SAARA: Well I have two things now, can I say both?

TEACHER: Do they have anything to do with this topic?

SAARA: Yes. I don’t understand how they could make it out of wool, I once cut one of those foreign notes, which was useless, I cut it in half. Or then, I’ve cut a Finnish note, too, once, when mum said I can cut just the one, so I cut it and it wasn’t durable at all, and I tore it and it wasn’t durable at all.

ROOPE: Well it isn’t that durable in that sense, but from what I’ve heard, paper is weaker, so should they make money out of some metal, so that you need some kind of cutters to break it?

SAARA: And I don’t have to believe that.

TEACHER: No you don’t have to believe it. If you get a good explanation, then maybe you can change your mind.

Negotiating ground rules for collective participation

Some of the outdoor visits to the forest were realized in collaboration with another classroom community from the school. This was a first-grade classroom community and the pedagogical idea behind the collaboration was to encourage peer tutoring and guidance between older and younger students. The shared visit challenged existing ground rules in the classroom community resulting in frustration among the older students. The older students appeared to blame the younger ones for not acting as intentional and responsible members of the learning community. For them, the younger students did not follow expected practices and ground rules for participation, i.e. what it is to engage in collaborative inquiry in a forest setting. What is also notable, is that some of the older boys appear to take an agentive activity by slightly questioning and resisting teachers’ authority. The extract below highlights an interaction episode that took place after the visit to the forest. Here, the two teachers of classroom communities participate in the dialogue with the first and third graders when the students reflect upon their feelings and experiences. This episode powerfully highlights the importance of a shared culture of participation, communication and learning.

Excerpt 3

KIMMO: Afterwards he is complaining to us about it.

TEACHER 1: I wasn’t complaining to you, I understand that it was challenging for you to be with the first-graders, but you were acting up a bit, too. Jimi come to your group, Teemu and Ville, come with your groups, Erkki with your group, go.

TEACHER 2: I understand, boys, that you had a challenging task, it was really difficult for you, too, it wasn’t easy.

TEACHER 1: The main thing is you did your best, even I couldn’t do what you tried. You tried really hard, this was only the first time. You can’t succeed at once.

AARO: Well it wasn’t with me.

TEACHER 1: Really good, the first-graders have never worked with third-graders before.
TEACHER 2: And you took Tuukka into consideration really well, you waited for him, even if it was a little bit frustrating for you, but we’ll have other times, so you … .

TEEMU: And we waited a bit for Ville as well.

KIMMO: Well not just a bit. We waited for him during the whole trip.

TEACHER 1: Can you hear now, Tuukka, the boys are a bit upset that you didn’t go with them, even when they went with you first, and you were being slow.

KIMMO: Yeah, well we ran everywhere, when you went on the ice, we had to run after you on the ice, and when you stopped to look at a cone, we had to stop and look at the cone.

TEACHER 1: But then you didn’t go after them to look at what the older boys wanted to look.

KIMMO: Yeah, you just wanted to go on the ice, when we wanted to climb the rock. We wanted to be there first, and all of a sudden we’re there last.

TEACHER 2: Now we’ll try to learn that everyone, everyone, you too listen a little to the bigger boys. And you big boys, I bet you, or did you tell Tuukka that now you are irritated, that you want to go and look at something else?

KIMMO: Well we told him.

TEACHER 2: Yes, so Tuukka, you must listen more carefully next time.

KIMMO: He just carried on.

TEACHER 2: Okay, but hey.

KIMMO: He was interested in everything that was in the forest.

TEACHER 2: Well in a way that.

KIMMO: Everything, even the rug.

AARO: He could go there after school.

TEACHER 2: Your interests are a bit different now, but … .

KIMMO: Maybe it might interest you the first time around, but even I wasn’t that interested the first time, I just looked around and jumped on the rocks.

TEACHER 2: Yeah, boys, but it doesn’t sound very nice to me, that you, you can’t say on behalf of someone else, what they’re interested in, every person is interested in different things.

Taking on different positions

This short episode highlights another out-of-school visit participated in through collaboration with the first and third graders. Here, the students change flexibly positions as teachers and students, helping and guiding one another when needed; using the support of others, and recognizing others’ need for support. This is what Edwards and D’Arcy refer to as relational agency (Edwards and D’Arcy, 2004).

Excerpt 4

KIMMO: Otto, did you get it, yeah and, let’s ask something, how do you tell the difference between these two trees? (Waits for an answer.) I don’t mean you have to say these (points to the exhibition texts), but just in general, how do you tell them apart, Otto (unclear).

OTTO: … and those have smaller those things.

OLIVER: And look at what colour they are.

OTTO: Yeah, from that you can tell, too.

KIMMO: And from the colour you can tell, too (unclear).

OLIVER: And from that, how you can tell a pine, do you see there, a pine is like, it has lots of these.

AARO: Oliver this is a birch.

OLIVER: Yeah. No a fir—no, a birch, yeah. It has lots of this stuff.
Revisiting past experiences as a learning potentiality

In this episode the classroom community are reflecting on their experiences and learning gains from the visit to the museum of technology. Beforehand, the students had constructed questions for reflection under the guidance of the teacher and now each child in the classroom community was engaged in answering the questions. The teacher engaged in reflective discussions with some of the students while they were working on their texts. The extract highlights the challenges that the students faced in reflecting on one’s own learning experiences. Moreover, it demonstrates the complexities in pedagogical design of learning activities in and out of school. These are related to both the design of reflection activities and learning and teaching practices in more informal settings of learning. Out-of-school activities do not automatically guarantee more meaningful learning than activities constructed into being within the premises of the school.

Excerpt 5

TEACHER: Okay, let’s stop for a moment, the others can help. What for example could you write on question number one …?
PEKKA: I learn … I learnt how to move around in the forest (whispering).
TEACHER: Yes, let’s think about number one at first, Pekka.
PEKKA: I learnt how to move around in the forest and take care.
TEACHER: You learnt how to take care of children, take care of children, younger kids, pupils, Anni?
ANNI: Well Pekka, you’re supposed to put there what you learnt about forest as a topic, and not what you learnt in general. So did you learn how to take care of kids with forest as a topic?
PEKKA: Yeah, I learnt the forest.
TEACHER: Should we expand the question then, to what I learnt on the trip, so that you can put there whatever?
MAJORITY OF PUPILS: No, oh, aah (complaining voices).
JARI: Teacher, how can you write two sentences if you didn’t learn anything?
TEACHER: Well, then one sentence is enough.
JARI: I’m just going to write that [I learnt] nothing.
TEACHER: Okay
SAM: I know, you can do … .
TEACHER: Good
JARI: I didn’t learn anything on the forest trip.
TEACHER: Don’t talk over me, it could be, that you didn’t learn anything, this time around, then we’ll think, what we could do, that we’ll learn about the topic.
JARI: This number two is pretty difficult.
TEACHER: Has anyone learnt anything or what have you written on number one?
JARI: Nothing.
MARI: I haven’t made it that far yet.
TEACHER: Are there any examples?
JARI: No.
TEACHER: Okay, has anyone thought, that you could answer how I could have learnt?
MARI: But not that either, it’s pretty impossible to answer.
JARI: I just put down nothing.
TEACHER: For example … well okay, for example the options that come to my mind, that if you had found an interesting thing there, or if the forest would have been different, or if I had had more time to go where I wanted to go … or if I had received more teaching.
JARI: Is it ok if I put down, if the forest would have been more interesting?
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TEACHER: If the forest would have been more interesting, that’s one possible answer for sure.

JARI: Okay

TEACHER: You need to think carefully what.

JARI: If the forest would have been more interesting, that’s just one sentence.

TEACHER: Okay, let’s agree that one sentence is enough, if you can’t think of anything else, but, if all answer sheets say that I learnt nothing, then … I … it’s enough, but I’ll be a bit disappointed, in that case.

JARI: We agreed, on numbers one and two, that [I learnt] nothing.

TEACHER: So please try to think about number three still.

JARI: On three I put down (unclear).

JARI: I can never see there, I want to go closer.

TEACHER: Maybe you should check your eyesight.

JARI: No!

JARI: No, no!

TEACHER: Okay, we’ll work on this for another three minutes in complete silence.

Discussion

Often times learners of all ages are left to navigate in spaces and places of learning without adequate support or tools. In this study we have explored and discussed the potentiality of a dialogic inquiry approach to provide students with cultural tools to participate meaningfully and powerfully in learning spaces in and out of school. In our study, we were able to identify discursive practices that gave evidence of the students’ active engagement and agency in learning. We were able to identify the students’ negotiation of time-space relationships, contesting knowledge and authority, negotiating the ground rules for participation, taking on different roles, and revisiting past experiences as a learning potential, as well as weaving experiences and worlds together during their collective discussions. In all, the results of our study suggest that a dialogic learning culture has potential to provide students with cultural bridges to participate meaningfully and powerfully in learning spaces beyond the classroom. These bridges are vital in helping students to develop boundary-crossing competencies to bridge the gap between diverse learning contexts and to harness the funds of knowledge that they generate within and across them.

As the interactions of this classroom community demonstrate, the pedagogical culture of this learning community appreciated learners’ experiences, natural curiosity and authority in learning (Goos, Galbraith and Renshaw, 1999). In this classroom community the students were afforded the opportunity to take the stance of being active initiators in collective discussions who negotiate, challenge, reason, justify, and provide feedback to the ideas presented by the other members of the learning community. Regardless of the aim to enhance student-led discussions and horizontal information flow during the social interactions of the classroom, the teacher was not found to be a passive classroom member (Nathan and Knuth, 2003). Rather, as an expert member of the learning community, the teacher’s role was to support students’ meaningful engagement in socially shared learning situations (Tharp and Gallimore, 1988).

The discursive practices of the classroom investigated in this study can be viewed as descriptions of socially established and taken-as-shared ways of reasoning, i.e. norms of a community (Bowers et al., 1999). Whilst participating in classroom interactions, both the teacher and students apply the structures of the material and social world to align their activities with a cultural system (Cole, 1996). Thus, practices define the legitimate interactional and physical moves within a given context. Full participation in a practice requires that one is oriented toward certain aspects of experience, that one frames one’s activity in particular ways, and that one interacts with the physical and social environment in appropriate ways (Stevens and Hall, 1998).
The task of creating and enacting social practices that support dialogic inquiry within the classroom community clearly reconfigures the role of the teacher and students, as well as spaces and places of learning. Here, the students clearly have agency in meaning making and knowledge creation. As the results of this study suggest, in this classroom the students clearly take charge of the cognitive work, whereas the teacher’s responsibility is more directed to the management of the interaction. Micro-level, contextual insights into classroom practices in dialogic inquiry classrooms are valuable not only for evaluation purposes, but also for future design and realization of such practices. Furthermore, they provide a powerful resource for professional development activities (Nathan and Knuth, 2003).

Conclusions

The design of classroom pedagogies that encourage active student participation and meaningful engagement in knowledge building, that transform traditional student and teacher roles and reconfigure spaces and places of learning has been of interest to many educators and researchers in different parts of the world (e.g. Renshaw and Brown, 1997; Brown, 1994; Roth, 1995; Walker and Nocon, 2007; Wells, 1999). Understanding and supporting the development of learners’ multiple worlds, identity work, and boundary-crossing behavior is vital in a world where barriers continue to block understanding and obstruct attempts to develop and implement policies to ensure the success of all learners in today’s schools and society. Learners’ competence in moving between settings and having an active role in meaning making has significant implications for the quality of their lives and their chances of participating in schooling as a grounding to lifelong learning, and a meaningful life. Our study is an attempt to explore and develop models and best practices of participatory pedagogy for schools and for non-school institutions to bridge the gap between contexts and funds of knowledge. Moreover, we take seriously students’ own learning experiences, and their endeavors in organizing their own learning in these transitions. Via our research and development work we are beginning to see the possibilities that dialogic inquiry can offer for creating educational practices that make sense.

References


