

Pupils and teacher as co-researchers: conditions for equal voices

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Abstract

In this paper we report on an ongoing participatory action research project in the Netherlands, in which pupils, teachers, and museum and library educators collaboratively study pupils' learning in external educational environments. Members of all three groups have equal roles as co-researchers. As such, the project closely relates to international trends in the field of action research with and by children themselves. We aim at a high level of pupil participation in the project, namely the level of shared decision-making. Furthermore, in line with the work of researchers in Australia, we chose to focus on pupils' learning in external educational contexts (so far: museums and libraries), because we expected this would more easily provoke a change in the relationship between pupils and teachers. We also expected that this would have an impact on their relationships in the regular school context. In this paper we describe the way the participants collaboratively designed the project, aided by academic researchers and facilitators. The paper ends with some preliminary results for the various groups of stakeholders.

Introduction

Within the framework of the project 'Pupils as co-researchers', pupils conduct research in an external educational setting (museum or library) in collaboration with their teacher at school and an educator at the external institution. Together they make up the research team. This team investigates what pupils can learn and want to learn in the specific external educational setting and proposes improvements to the learning in that setting. The proposals can refer to the design and organisation of the setting, but also to the teaching methods, the educational goals and subjects, and the educational relationship between pupils, teachers and educators. They therefore concern the role of the educator, the role of the teacher, as well as the role of the pupil.

The aim of each research team is: (1) to improve learning in the external educational setting; (2) to actively engage pupils in developing the education they receive; and (3) to enhance positive pupil-teacher behaviour. The aim of the project as a whole is to

develop a strategy by which participation of pupils as co-researchers can be achieved and to investigate conditions that facilitate or impede this.

This paper focuses on the questions:

- How and under what conditions do the participants design their collaborative research in external educational settings?
- What are the outcomes of this collaborative research approach in terms of: (1) role changes, (2) learning of all participants, (3) changes in the external educational setting, and (4) impact on the teacher-pupil relationship within the school?

The outcomes are based on the experiences of a pilot project of four research teams in the 2009-2010 study year. In the ongoing study year, which started in September 2010, the project is continuing with another six research teams.

Setting

The 'Pupils as co-researchers' project is one of seven projects of the 'Behaviour and research in the educational praxis' research group at Utrecht University of Applied Sciences in the Netherlands. The research group studies behaviour in education from a critical perspective aimed at capacity building of all who are involved in the educational process. A particular emphasis is placed on teacher-pupil relationships and on the reciprocity between the behaviour of the teachers and the behaviour of the students. The way this reciprocity is shaped depends on the institutional, cultural and social context. This position has led to the following areas of special interest in the research programme:

- Firstly, the research carried out in the group focuses on increasing and utilising the scope of both teacher and student to act in order to achieve productive mutual teacher-pupil relationships. There is a special emphasis on relationships with pupils who place extra demands on the teacher.
- Secondly, both instrumental and moral considerations play a role in increasing and utilising the scope to act. The concept of praxis is therefore used as a framework for thinking and this concept refers to the moral intentions and the moral consequences of behaviour in education (Ax & Ponte, 2010).
- Thirdly, the research group wants to increase the scope to act by involving teachers, students and other practitioners in the research activities.

In line with these starting points, the research projects resemble participatory action research, in which academic researchers closely collaborate with lecturers and students in teacher education programmes as well as with teachers and pupils in schools. In addition, the research group collaborates with institutions outside the school, such as museums and a library. This allows teacher-pupil relationships to be studied from different perspectives, in different situations and in relation to institutional, cultural and social contexts.

Pupil participation

The pursuit of pupil participation stems from various motives, which can be categorised into four groups:

- *Legal* motives which emphasise children's right to participate. These rights are laid down in a number of articles of the international Convention on the Rights of the Child (CRC), drawn up by the United Nations General Assembly (1990) (see also Warnick, 2009).

- *Social* motives which emphasise that pupil participation is a first *real life time event* on the path toward citizenship and democracy (e.g. Cook-Sather, 2009; Rudduck & McIntyre, 2007)
- *Innovative* motives which emphasise that pupils have relevant insights which the school can make use of when reforming the curriculum in a broad sense. That also creates *commitment* and *ownership* (see Cook-Sather, 2009; Rudduck & McIntyre, 2007; Thomson & Gunter, 2006)
- *Pedagogische*¹ motives which emphasise that teachers – out of a genuine belief in their potential – should invite pupils to contribute their own opinions and ideas (see De Winter, 2009; Rudduck & McIntyre, 2007).

In the 'Pupils as co-researchers' project, the emphasis is on *pedagogische* motives, though of course they cannot be detached from the other motives. De Winter (1995), for instance, describes participation as children and young people having the opportunity to be actively involved in decision-making with respect to their own lifeworld (p. 42). That participation is a right and he believes it also contributes to the development of young people into citizens. Archard (in Berthelsen, Brownlee & Johansson, 2009) points out that this right has to be initiated and organised by adults (in this research that is the teachers and external educators) and that they have to help the pupils to make use of this right. This approach breaks through the traditional division of roles between pupil and teacher. The pupil ceases to be the 'empty vessel that the teacher has to fill with knowledge', and becomes an active participant who has to be given the scope and must take up the opportunity to co-design the learning process. This role change implies a different way of interacting with each other; in other words, a reorientation of the relationship between teacher and pupils (Stevens, 2004).

The relationship between educators and children can be understood in terms of social-cultural constructivism, meaning that it is based on the idea that they behave in accordance with reality as they interpret it. The way they interpret reality is culturally determined and it develops in interaction with others. This interaction is reciprocal. Educators and children interpret each other's behaviour and they react to each other's behaviour (Ponte, 2009). Smolka and Dee Goes (1995) explain reciprocity:

'Reciprocal' is used in the sense of being inversely related, as empowering of one disempowers the other. But yet, in a deeper sense, we can say that reciprocal means constructively related. (p.178)

Smolka and Dee Goes are pointing out two important consequences of social-cultural constructivism here. Firstly, interactions are conceived as the result of a co-constructive process and, secondly, power inevitably plays a role. Various researchers have studied power as an inherent given in interactions between teachers and pupils in the classroom (Berthelsen, Brownlee & Johansson, 2009; Buzzelli & Johnston, 2002; DeSpiegelaere & Van Coillie, 2009). They stress that power should not necessarily be seen as negative.

¹ *Pedagogisch* is an adjective (in Dutch) that reflects the European tradition of child upbringing, education, and pedagogy. Here, it stands for an amalgam of didactic, pedagogical, teleological, and moral aspects of pupil-teacher interactions.

The Dutch terms *pedagogiek* or *pedagogisch* and *didactiek* or *didactisch* cannot be literally translated as 'pedagogy' or 'pedagogic' and 'didactics' or 'didactic'. *Pedagogiek* or *pedagogisch* refers to the science of the child's upbringing in general (cognitive, social, emotional etcetera) and refers not only to education, but also to rearing processes in the family, social care, and many other institutions. *Didactiek* or *didactisch* refers to pedagogy as a theory of teaching. (see Ax & Ponte, 2010).

Buzzelli and Johnston (2002, p. 51) for instance, assert – based on British research literature – that “the vast majority of activities in which children engage in classrooms would almost certainly not take place without the teacher’s involvement”. This is consistent with Spiecker (1982) who – based on continental European pedagogy – asserts that there cannot be full reciprocity in the teacher-pupil relationship, because the actions of the educator in an institutional context are necessarily intentional: the educator wants to do something with the children and is intervening in their lives with that purpose in mind (Ponte, 2002).

Teachers' authority to intervene in pupils' lives is based on professional knowledge and the legitimacy afforded to them by society to transfer that knowledge and to organise the pupils' learning. Empirical research (Gore, 1994, 1996) leads to the conclusion that power is not something that can be avoided. It should, according to Gore, be conceived as a continuous process in which all the parties involved participate and negotiate. This last point in particular has been the reason behind critical analysis of the frequently one-sided and authoritarian relationships of teachers with their pupils. Cook-Sather (2009), for instance, argues that while children and young people are seen as a significant social group in education, they are seldom consulted when it comes to decisions about their education. This critical analysis goes hand in hand with the desire not only to listen more carefully to what pupils have to say about their living and learning environments, but also to allow them to actively participate in shaping them.

Research (for instance the overview of Fielding & McGregor, 2005) has shown, however, that pupil participation can take shape in different ways and at different levels. In their paper ‘*Talking about youth participation – where, when and why?*’, Howard, Newman, Harris and Harcourt (2002) present a summary of descriptions of participation since 1969, when Arnstein described his view of *citizen participation*, to Shier's reworking in 2001 of Hart's participation ladder (1992). This ladder has eight levels of participation, where the lowest levels are seen as false participation or token participation. Shier (2001) and Egg (2009) adapted Hart's participation ladder. Shier avoids the levels of non-participation and Egg split the ladder into parallel ladders for teacher initiatives and pupil initiatives. Fielding (2001) uses a four-fold model of student (pupil) participation which distinguishes between students as sources of data, students as active respondents, students as co-researchers, and students as researchers. In all of these classifications the ‘student as researcher’ approach is conceived as the most intensive form of participation. Other researchers including Groundwater-Smith (2007); Taylor and Robinson (2009) and Aston and Lambert (2010) have shown that (1) there are ethical dilemmas associated with pupil participation; (2) these are related to the specific and complex context of the teaching; and (3) for these reasons participation is usually confined to the least intensive levels. Warnick (2009), for instance, states that schools have the legal and moral obligation to give pupils a voice, but those obligations “are modified by the special characteristics of the school environment” (p. 200). He concludes that these school characteristics lead to contradictory implications for pupil participation and that:

if and when speech rights are limited, they should be limited in an educational way, one that affirms the value of free speech while acknowledging its limitations. (p. 211)

Pupil participation, in other words, is not only a legal right that can be distributed (Young, 1990), it is also an educational challenge which teachers and pupils have to give expression to in their daily interactions. However, this is a challenge which turns out to

be difficult to take up, because traditional views, expectations roles and patterns of interaction need to change, within an organisational context defined by traditional codes (Cook-Sather, 2002). This is certainly true of the most intensive forms of participation such as 'student as researcher' initiatives.

The 'Pupils as co-researchers' project

The 'Pupils as co-researchers' project is an ongoing participatory action research project in the Netherlands in which pupils, teachers, and museum and library educators collaboratively study pupils' learning in external educational environments. Based on the assumption that the level of participation is related to characteristics of the context and the opportunities created within that context, we chose to let teachers and pupils get experience with participation in educational contexts:

- in which a considerable part of the activities is conducted outside school premises, and in which the focus is on out-of-school learning;
- that are not everyday educational settings for either pupils or teachers (museum, library) and,
- in which both pupils and teachers have roles different from what they are used to, namely as co-researchers.

In that way, we expected the participants to be able to build a safe environment, which creates opportunities for collaboratively changing the relationship they have and experimenting with new behaviour. In designing the project we were inspired by educational projects in Australia (cf. Groundwater-Smith & Kelly, 2009; Kelly & Groundwater-Smith, 2009).

The actual project 'Pupils as co-researchers' was set up to create such a context in which teachers and pupils can conduct collaborative research and pupil participation can take shape in that pupils act as co-researchers. As such, the project can be considered as corresponding to other 'students as researchers' initiatives.

The project has two phases: the pilot phase in the study year 2009-2010 and the follow-up phase in the current study year 2010-2011. Four research teams were formed in the pilot phase, and six are active in the follow-up phase. Each research team consists of three to five pupils (as representatives of their class), their teacher, and an educator from the external institution. All participants volunteered to take part in the project. All research teams focus on the general question "What can pupils learn and what do they want to learn in an external educational setting?". Each group of stakeholders within the research team works from their own perspective on pupil's learning but based on topics chosen collaboratively. Each group within the research team consults peers and colleagues on a regular basis.

The 'Pupils as co-researchers' project has multiple goals, that can differ for the various groups of stakeholders. Clearly, the project should benefit all stakeholders. The main goal is for pupils and their teachers to find out how to collaborate as co-researchers in external educational settings and to deal with benefits and obstructions to the learning process. In this paper we focus primarily on the benefits for the research team members and less on the outcomes for the academics and facilitators (university teachers).

The intended outcomes of the project are:

- (1) role changes, (2) learning of all participants, (3) changes in the external educational setting, and (4) impact on the teacher-pupil relationship back at school.

Participants

The pupils who are members of the research teams are from different classes at primary schools (age 6-12 years), which include mainstream schools and schools for children with special educational needs, and from two classes at a secondary school (age 13-14 years). They either applied themselves for a position in the research team or they were asked or selected for this by their teacher. They include both boys and girls, from various ethnic backgrounds, and of various intellectual and skills levels.

Eleven teachers, nine females and two males, are participating in the project. Two of them are students in a secondary school teacher training programme at Utrecht University of Applied Sciences doing a part-time internship of one year; four teachers are experienced primary school teachers taking an additional master's course in Special Education; four teachers are from a special primary school, two of whom just started their teaching career; and one teacher has a master's degree in Environmental Studies, then switched to a primary school teacher training programme, and is now in her first year of teaching.

In most cases, the teachers were the first to be invited to participate in the project. This bottom-up approach of selecting teachers had pragmatic reasons (it is easier to contact a single teacher and build up the research teams) as well as strategic reasons (no red tape and official rules). Furthermore, it resonates with the idea that innovation of practice can best be achieved bottom-up. The teachers participate in the project on a personal basis, not necessarily as a result of a decision or approval of the school management. On the other hand, commitment of the school management and of other stakeholders (peers, colleagues) is explicitly sought, as a means of feeding the project with ideas and suggestions, for supplying time and resources, and in order to facilitate transfer of insights and innovative practices from the project context to other school contexts.

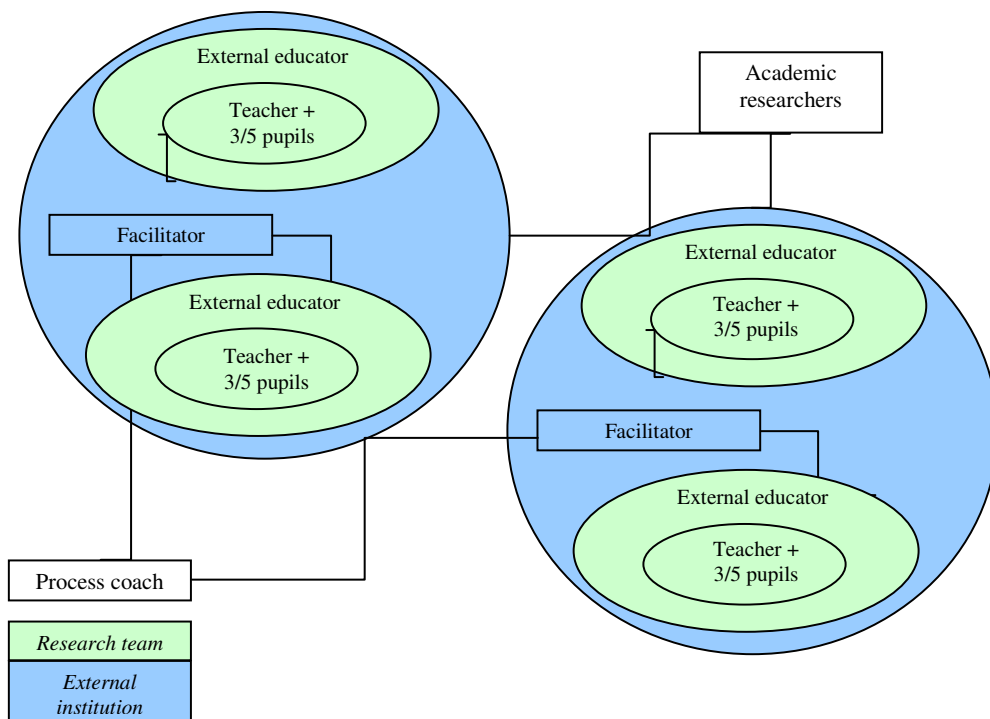
Four external institutions are involved in the project: three museums and a library². From each institute an educator participates in the project as an extra member of the research teams that are researching his or her institute. All educators are responsible for opening up the collection of the museum or library to young people and for designing appealing educational activities.

Teacher educators from the university act as facilitators for the research teams. The facilitator takes over a large part of the organisation around the research team and chairs the team discussions. If requested, the facilitator gives advice or feedback. The intention behind this is to better enable the pupils, teachers, and museum educators to take up equal roles in the research team.

Academic researchers are involved as consultants for facilitators and teachers, as critical friends for the research teams, and as managers of the project. They monitor the process and they help the participants to adjust their way of working.

Figure 1. Project organisation

² Museum voor Communicatie (Museum of Communication), The Hague; Museum Catharijneconvent (museum of past and present Christianity in the Netherlands), Utrecht; Universiteitsmuseum (University Museum; museum of science and research), Utrecht; DOK Delft (Library Concept Center), Delft.



Roles of research team members

In principle the roles of all research team members are equal. They participate in the research team on an equal standing, in that they:

- take shared decisions about research questions and methods to be used;
- collaboratively analyse the data and interpret the findings;
- reach agreement about conclusions and recommendations;
- collectively design the presentation of the outcomes.

Furthermore, they all have the same status as representatives of their peers or colleagues. In practice, however, the roles in the research teams diverge somewhat because of differences in tasks and responsibilities of the various groups in the educational process, because of differences in their levels of knowledge, experience, and skills, and because of differences in the positions the research team members have within the school or external institution.

Pupils

As the subject of the research is the pupils' learning, for pupils the focus is on their own learning (first person), while for the teacher and the museum educator the focus is on the learning of others (second person). Pupils are invited to investigate what they themselves want to learn in the external setting and how this can best be arranged. In this sense, they are the heart of the research team, because only they can report what the setting really means for the learner. They act autonomously, that is without the regular supervision and guidance of their teacher. Within the framework of the project, they can speak freely about positive and negative aspects of their learning, about all learning opportunities they see, and about their meaning for the context and the behaviour of the professionals involved (the teacher and the educator). Seriously taking part in discussing and in deciding on educational matters is a significant extension of the role of the pupil. When put into practice, and in combination with the points just mentioned, the pupils are participating at the level of 'co-researchers' (Fielding, 2001).

Teachers and museum educators

Unlike the pupils, teachers and museum educators are adults and professionals. They both have responsibilities for organising the pupils' learning and as such, in everyday settings, they both have a position superior to the pupils. So within the framework of the project, they have to adopt a different, more equal position, by which pupils are enabled to fully contribute as co-researchers. Within the constraints of their responsibilities as professionals in education, they have to define the extent of control and influence the pupils are allowed.

As co-researchers, teachers and museum and library educators use their specific expertise, but they do so in order to judge what aspects of the external educational setting affect the pupils' learning. In doing this, they attempt to take on board the pupils' perspective on learning. Finally, the educators at the museum or at the library are 'on their own ground'. They are the experts within the research setting and they have superior or exclusive knowledge about the building, the procedures and activities, the collection, the educational program, etcetera.

Phases in the research process

The research teams conduct a series of activities that can be ordered in several phases:

- *Preparation phase*: discussion of the goal and the subject of the research project, selection of and practising with procedures and methods, and translation of the overall research question into the concrete research question of the research team;
- *Data collection phase* (site visit): the actual half-day visit to the museum or other out-of-school educational setting. During this visit the research team collects data on the pupils' learning in this educational environment (digital images, notes, drawings);
- *Data analysis and consultation phase*: analyses of the collected data at school. Each stakeholder consults colleagues about findings and interpretations: pupils consult their peers in the class, teachers consult their fellow teachers at school and museum educators consult their colleagues at the museum. Subsequently, information, questions, and interpretations of the consultation round are incorporated into the formulation of the final results;
- *Presentation of results*: public presentation of findings, conclusions and recommendations of the research team to fellow participants, peers, and interested others.

Findings and results

The findings and results described below are of a preliminary character, while the follow-up phase of the project is still ongoing. Furthermore, most results are based on data that have been collected for the PhD study on pupil participation by Leon Plomp.

Project organisation and research phases

On the basis of evaluative remarks and experiences of the participants, adjustments have been made in the organisational set-up of the project and in the research phases, and new activities have been added in order to optimise the follow-up phase of the project. In the following sections these adjustments, additions, and other findings are described by research phase. After that we add some remarks about the project meetings.

Preparation phase

The activities of the research teams start with a preparation phase in which members discuss the goal and the subject of the research project, go over the procedures and methods and practise them, and translate the overall research question 'What can pupils learn and what do they want to learn in an out-of-school setting?' into a concrete research question for the research team. In the pilot project, this was limited to a single lesson about learning (different ways of learning, preferences in learning, sources of learning, etcetera), making acquaintance with the museum educator as their fellow co-researcher, and a brief off-site introduction to the specific museum.

The evaluation of pilot phase experiences showed that in order to function as a researcher, the research team members need a good grasp of what research is, how it is structured, what instruments are appropriate, and how to use them for data collection. Observations in the pilot phase showed that at times some pupils just wandered around without any clear idea of how to deal with the research question. A stronger connection with issues of research and learning was considered necessary. In addition, the use of digital cameras turned out to be not so straightforward as expected and it took quite some time for the participants to get used to them. For these reasons, in the follow-up phase of the project, the preparation phase has been extended to a period of three to four months. In this period a series of five workshops or lessons prepare the research team members for their task as researchers. All pupils of the class or group participate in these workshops, not only the members of the research team. In this way, the peers get more involved in the work of the research team and can better imagine what the findings mean, which in turn, is expected to improve the quality of the feedback they give. The goal of the series of workshops is to collaboratively explore the notion of learning and research, to practise the use of media such as digital cameras, and to agree on other research instruments and data collection. Furthermore, a very small-scale research project within the school is being conducted, in order to put the workshop content together and to get acquainted with the role of researcher. A workshop format has been suggested by the project management, but it is being adapted to the knowledge, skills and needs of the specific class by the teacher in close consultation with the facilitator.

The pilot project showed that pupils, especially the younger ones, became overwhelmed by the new surroundings and the abundance of objects and activities during their first visit. They needed ample time to explore the site and to experience what the museum had to offer. Only then, did they get around to focusing on the research question and on the aim of the site visit. However, extending the visit to a whole day, was considered not feasible in practice and too long for young pupils. In the follow-up phase of the project, this issue is being tackled by inserting an extra visit. Before the actual research visit (for data collection), the external site is visited once by the research teams together with all pupils of the class or group. This first visit is intended as an introduction to the environment and to the activities the pupils can perform in that environment. During this first visit and shortly afterwards, the research team members come to an agreement on their research plans for the data collection phase.

As expected, at times it appears to be difficult for the teacher to hold back and resist the inclination to decide for pupils what to do or to let them do their work unguided. For this reason, even more than in the pilot year, the facilitator is present at activities of the research team and assists the teacher by giving workshops and chairing discussions. This is expected to give the teacher a better opportunity to adopt and maintain a less directing attitude. The more intensive role of the facilitator is not limited to the preparation phase, but extends to all phases in the research process.

Data collection phase (site visit)

For the research teams, the principal part of the project activities is the actual half-day visit to the museum or library. During this site visit the research team collects data on the pupils' learning in this educational environment by participating in educational activities; by visiting specific exhibitions or departments; by taking notes; and by making photographs of places, objects and other things they think are connected with their research questions. The facilitator is present at the site, takes over all kinds of organisational matters and chairs the introductory meeting (recapitulation of the aims and procedures of the visit). The pilot phase showed that both pupils and teachers worked with great enthusiasm and concentration. However, they sometimes got carried away by the museum activities and strayed off the research topic of what and how pupils want to learn. In the follow-up project, therefore, a short halfway meeting has been added to the site visit, in which the facilitator lists the work done so far and reminds participants of the aim of the site visit.

On-site and immediately afterwards, the experiences and first findings are discussed on the basis of the photographs and notes taken by the research team members. In order to focus on what they have found, the research team members are first asked to write a one-minute paper and to identify one or two photographs they feel are most significant. The discussion directly after that is chaired by the facilitator. This discussion is video-/audio-recorded and transcribed.

Data analysis and consultation phase

The research team analyses the collected data in more detail at school. Each stakeholder consults colleagues about findings and interpretations (peer debriefing): pupils consult their peers in the class, teachers consult their fellow teachers at school and museum educators consult their colleagues at the museum. Subsequently, information, questions, and interpretations of the consultation round are incorporated into the formulation of the final results.

In the pilot phase, the consultation of peers and colleagues was not very well developed. They did not play a clear role in the process of data analysis and were not seen as partners in the research. In the follow-up phase, more emphasis is being given to the contribution of peers and colleagues, and the research team members are more explicitly positioned as representatives of their groups. This implies that the data analysis is conducted in closer collaboration with the research team and the other stakeholders. Presumably, this will lead to broadly supported results and to interest in and commitment to the research project among non-members of the research teams.

Presentation of results

The final results are collaboratively processed into a public presentation of findings, conclusions and recommendations of the research team. The research teams can decide for themselves about form and content of the presentation. In the pilot phase, all four teams chose to prepare a PowerPoint presentation of the main topics, illustrated with photographs and clips. The two teams from the primary school presented in pairs of pupils age 6 years and 10 years respectively) in an interview setting, the teams from the secondary school both chose a spokeswoman to present their results.

In the pilot phase, the pupils, teachers, and museum educators presented the outcomes of their research in a plenary meeting of all research teams. A broad audience of

stakeholders attended the meeting: the management and employees of the museum or other external setting, their fellow pupils, the school management, and teacher colleagues. Parents of the children participating in the research teams were invited to this presentation as well. This practice is being continued in the follow-up phase.

The public presentation of results serves several goals: (1) it sets a clear endpoint for the research teams and focuses them on the research question and on the intended audience; (2) it strongly motivates the participants to put effort into the work; (3) it shows the results of the research efforts to those not directly involved; (4) it creates a platform for the pupils (and teachers) to show their existing and newly acquired knowledge and skills; (5) it demonstrates an essential element of research, namely to make results public. The presentation phase remains a key phase in the follow-up project, therefore, and it is given due weight by inviting 'important people' (parents, managers) to it and by setting it up as an celebratory event.

Moreover, the research teams work on authentic problems and questions with regard to pupils' learning in the museum or library. So the results are to be taken seriously and suggestions are to be acted upon, if possible and feasible.

Meetings to discuss work

Each phase in the research process and each step in the preparation phase is preceded by a meeting of all teachers, facilitators, project management, and an expert on research with children. Experiences, progress and steps to be taken are discussed at these meetings. Apart from organisational matters, special attention is paid to the role of the teacher and the space for pupils to be heard and listened to. The meetings have a preparatory character, but their purpose is also to create an environment for mutual support and learning. They enable the participants to exchange ideas and learn from each other, and to participate in the design of the project by evaluating activities and thinking along with the project management on next steps in the project. Furthermore, they are supposed to strengthen ties between the participants that they can build on afterwards. As such, the meetings can be considered as the beginnings of a coalition of teachers and schools. To strengthen this further, participants are encouraged to exchange ideas and experiences by email and to collaborate in their research activities.

The teachers and facilitators in the pilot phase greatly appreciated the meetings and found them very useful, not only for discussing their work and optimising their plans, but also for placing the topic of practitioner research and pupil participation on a professional footing. For this reason the meetings have been given an even more intensive learning character.

The next sections describe outcomes concerning the four aspects of the second question of this paper: (1) role changes, (2) learning of all participants, (3) changes in the external educational setting, and (4) impact on the teacher-pupil relationship within the school.. They are based on interviews with pupils and teachers, and on observations and diaries of teachers, facilitators, and academic researchers.

Role changes

The pilot phase showed that pupils saw themselves and their roles differently in the school context and the project context. They described themselves as recipients, sometimes as participants in discussion, in the regular school context, but now, in the external educational setting, they found that they could enter into a dialogic relationship

with the teacher and fully and easily express their own views. Pupils were very capable of distinguishing between the world within school and outside school (the daily school context versus the project context), which they explained from the way the education is organised. They were aware of the difference in power between them and their teacher. Pupils, more than teachers, reported the importance of an environment that is different from the regular school context for giving them the space to participate. Quite significant is this remark of one pupil: "Now, in this project, there's enough time to have a serious discussion with the teacher. You're not cut short after 5 minutes, as in school".

On the other hand, teachers did see the added value of the role changes in the research context, as they reported having closer, more companion-like contact with their pupils. At the very moment the research team walks out of school to visit the external site, teachers noticed the change in attitude and behaviour of their pupils, such as being more friendly and relaxed, and more open towards the teacher. Pupils see change in their teachers as well, because they are more accessible and less concerned with keeping order. At the same time, the teachers experienced their position as difficult, due to their dual role: co-researcher and teacher. This could cause a feeling of tension. As one teacher put it: "You're treated as a co-researcher, but they still call you 'miss'."

Teachers, more than pupils, put emphasis on constraints the school organisation and the educational system puts on them. They struggled with ways to carry over the way of working as experienced in the project to the regular school context, because in school they dealt with a group of 30 pupils, not just 3 to 5 as was the case in the project. Furthermore, they seemed to have difficulties with giving up control, while pupils rather appreciated this. As one pupil said: "It is not that we have become more 'the boss', but that she [the teacher] has become less so." Worthy of note here nevertheless is the fact that that the starting point for all research teams was a rather low level of participation, but that they all reached the level of co-researcher at least in a part of the project and all members described the experience as valuable.

Learning of participants

By participating in the activities of the project and by acting as co-researchers, the pupils, teachers, and museum educators acquired new knowledge and skills about research and how research can be applied for the purpose of improving education. Since being co-researchers implies collaborating on all aspects of the research process, the participants acquired or further developed a range of social skills, such as listening, discussing, advising, reaching agreement, encouraging, giving feedback, etcetera.

Visiting a museum as a researcher, guided by a research question, is substantially different from the regular way pupils and teachers visit museums. Normally they let themselves be led by what the museum offers and by the given educational structure of the activities. Broadly speaking, they just go through the museum as it presents itself. Whereas as researchers, they were consciously investigating what learning opportunities were available. In this way the pupils learned what they like to learn and how they like to learn and they formed an opinion about their own preferred learning style. In addition, being on equal standing with adults while investigating, and being taken seriously in this, boosted their self-confidence. And others noticed this change in attitude:

What I found so great about the project is that the researchers were so full of self-confidence. They were taken very seriously and that radiated from them.

That's why they were seen as 'intelligent children' with the clipboard, the camera and their critical outlook. (museum educator)

The teachers and museum educators became conscious of the value of the pupils' contribution for evaluating educational activities that had been developed for them:

Adults, parents and teachers are often doubtful about *Het Rijk van Heen en Weer* ['The Land of There and Back', an interactive educational exhibition at the Museum of Communication]. I often have to explain what children learn at this exhibition. Teachers see their pupils playing and have difficulty understanding what they are doing. To be honest, I sometimes have problems with that myself. Each land in *Het Rijk van Heen en Weer* has its own learning goal, but communication is a vast theme. What research has taught me is that children can make out the learning goals in the games and objects. If anything, children are better able to see the learning goals than adults. This is very important for me, as an educator, and for the people who create the exhibitions. It confirms much of what we thought during the development process. (museum educator)

Furthermore, teachers reported having gained more confidence in the capacities of their pupils and in the extent to which they can handle independence. They found that the children did not misuse the space for participation. They also learned to listen more to their pupils, and indicated that they gained more insight into pupils' potential and educational needs.

I've seen for myself that children are perfectly able to take a research question like this as the starting point for doing a piece of research.

It was good to see that the children got a lot of enjoyment from it while at the same time they learned a lot. Despite the fact that we as observers sometimes thought that they'd stopped doing the research, they were still doing it. (teacher)

In comparison to everyday schooling, both pupils and teachers got a broader, richer perspective on learning by participating in the project, as they became aware of alternative ways of learning, alternative places for learning, and alternative sources of learning.

Changes in the external educational setting

Pupil participation in researching an educational setting without any foreseen impact on educational practice might be a very frustrating experience for children and could even be labelled as unethical. So it is crucial that it is made clear beforehand that the results and recommendations of the research team will be taken seriously and that pupils and teachers will be informed of the impact that they had. Alternatively, if they are not acted upon, what the reasons for this are. In the project so far, both museum educators have met this requirement, for not only were they present at discussions with the co-researchers and at the presentation of results, they were also constantly observing what the pupils did, what obstacles they encountered, and what according to them could be improved in the exhibitions and the educational activities.

In general everyone agrees that the museum, and especially the children's exhibitions, need to be scrutinised more often by children. After all, they know better than anyone what they like.

As an educator and as someone who puts together exhibitions, you are mainly guided by your own experience, literature and key objectives. Sometimes you lose sight of what it is really about – the children. Only children are often not asked what they think, while adults are always keen to share what they think. It's easy to get an adult's opinion. (museum educator)

What I was faced with was that the children in group 3 were looking very hard for concrete information. One of the questions they had asked before the visit was: 'How does a letter get from the Netherlands to Africa?' It's not easy to find this information in the museum. The Museum of Communication is in fact constantly seeking ways to present interesting historical information in a fun way. The exhibition is designed so that children learn through play. If a child comes to the museum with a specific question, it takes a lot of effort to find the answer. (museum educator)

The work of the research team was also appreciated by other staff at the museum:

My colleagues are very interested to find out the research results. (museum educator)

Both museum educators informed the pupils about the impact of their work, in some cases this was even visible in prompt changes in the museum and in concrete plans. As one educator reported to the pupils at the final presentation in reply to their complaint that a specific object was very difficult to find:

Immediately after your visit I opened the door of the cabinet with the bishop's robes and put up a little text next to them with an explanation, so it is easier to find now. (museum educator)

The other educator explained a plan based on what the research team had showed her:

The idea is going round here to develop a booklet for adults explaining how and what children learn in *Het Rijk van Heen en Weer*. (museum educator)

On the same occasion she explained to the pupils why some of their recommendations could not be implemented instantaneously (more light could damage the delicate collection; more computers are something the museum wants too, but the budget does not allow it). The pupils were obviously very content, firstly because of the perceived impact of their work, and secondly because of the mature way they were addressed.

Teacher-pupil relationship *within* school

Teachers and educators were greatly surprised by the capabilities of the pupils, their fellow researchers, as shown in their roles as co-researchers. Apparently, never before had they really thought about how to engage pupils in thinking, discussing and deciding about their learning. This is understandable in the education system they work in, which can be characterised as curriculum-led and teacher-led. For some teachers, however, their experiences with the project encouraged them to experiment with alternative behaviour in the classroom. A teacher reported that she now frequently asks pupils' opinions on matters of lessons plans and she reflects more often on possible ways to engage her pupils in decisions regarding their learning. Her colleague, also an experienced teacher, reported the same effect. It may be hypothesised that the level of teaching experience mediates the participation space that teachers allow their pupils. Teachers go through a process of development from beginning teacher, to experienced teacher, to expert teacher. The willingness to give pupils a voice and the ability to deal

with pupil participation may require a higher level of teaching experience, a more self-confident teacher.

Concluding remarks

The 'Pupils as co-researchers' project has only recently started. The collection and analysis of data is still ongoing and current results and conclusions have to be further developed and confirmed through a final analysis of outcomes. Meanwhile, several themes are emerging that are of interest for investigation in the follow-up phase of the project:

- risks involved in pupil participation, consequences of starting a process that is irreversible, and effects of risk-taking on the pupil-teacher relationship;
- how to value outcomes of the project that can be observed and described, but that are hard to measure, such as self-confidence, respect and trust, while current educational policy has a strong focus on measurable outcomes and hard skills;
- incorporation of participatory behaviour that emerged and was learned in the external setting in regular teaching and learning practice;
- transfer of changes in educational practice to other teachers at school. We expect this to be dependent on the extent to which school management and teacher colleagues understand and accept pupil participation as a necessary and valuable aspect of teaching and school practice;
- Level of participation and the way this is related to teacher- and pupil characteristics and context factors;
- establishing and sustaining a community of teachers and schools, aimed at supporting the development of pupil participation in education.

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