

**DISTRIBUTED CURRICULUM LEADERSHIP: HOW NEGOTIATION BETWEEN
STUDENT AND TEACHER IMPROVES THE CURRICULUM**

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Abstract

Students co-constructing their curriculum with their peers and teacher is an example of leadership distributed to students. By co-constructing their curriculum students have the opportunity to give direction to their learning and practice democratic citizenship and distributed leadership principles. This article explores practices of shared decision making about the curriculum by involving students, and presents results of this process. It also acknowledges that often teachers can be reluctant to change their pedagogical habits. Some of this reluctance can be due to a lack of understanding of how to practically operationalize co-construction of the curriculum and distributed leadership in the classroom. The research is based on an extensive literature review and a series of case studies in five schools for lower secondary education (ages 11-15) in The Netherlands and Flanders, Belgium, around the question: "What content and perspectives do students bring to the curriculum?" This article provides a thick description of two of these cases. Furthermore, it seeks to answer the more general question: "Is the curriculum-negotiation method suitable for organizing teacher and student leadership in curriculum matters?"

Introduction

Students co-constructing their curriculum with their peers and teacher is an example of leadership distributed to students. By co-constructing their curriculum students have the opportunity to give direction to their learning and practice democratic citizenship and distributed leadership principles. This article explores practices of shared decision making about the curriculum by involving students, and presents results of this process. It also acknowledges that often teachers can be reluctant to change their pedagogical habits. Some of this reluctance can be due to a lack of understanding of how to practically operationalize co-construction of the curriculum and distributed leadership in the classroom. The research is based on an extensive literature review and a series of case studies in five schools for lower secondary education (ages 11-15) in The Netherlands and Flanders, Belgium, around the question: "What content and perspectives do students bring to the curriculum?" This article provides a thick description of two of these cases. Furthermore, it seeks to answer the more general question: "Is the curriculum negotiation method suitable for organizing teacher and student leadership in curriculum matters?"

Theoretical Framework

Brasof (2015) argues that in the discourse on distributed leadership, the voice of the student is missing: "By omitting student leadership both theoretically and in practice, powerful concepts such as distributed leadership cannot fully conceptualize and enact successful school improvement strategies" (Brasof, 2015, p. 12). We argue that leadership opportunities and student voice opportunities can be found in daily or hourly learning and teaching situations accessible for all students. Quaglia and Corso (2014) claim that "leadership and responsibility is twofold: first, students must develop strong decision-making skills and second, students must have real decision-making opportunities" (p. 122). This article provides an example of the possible applications of student voice in the curriculum. Bron, Bovill, Van Vliet, and Veugelers (2016) consider this approach an important way to realize broader aims around the development of participative, democratic citizens within the educational setting. Castells (1996) argued that modern societies that have stimulated the participation of citizens and where the civic society is organized move in the direction of networked societies characterised by distributed leadership. Using the terminology of Spillane, Halverson and Diamond (2004) the broader educational aim to develop participative, democratic citizens can be considered a "macro function". Schools function as a site where this macro function can develop by offering students opportunities to practice and experience participation and voice. In addition, involving students in decision making about their own curriculum improves the relevance of that curriculum (Bron and Veugelers, 2014). We consider an improved, more relevant curriculum a second macro function. In this article we will introduce a method of curriculum negotiation that can be regarded a "micro task" in Spillane and colleagues' terms. The method consists of an instrument, a student prompt sheet, used to organize this process within class. Spillane, Halverson, and Diamond consider this an "artifact". These three aspects will be further described throughout the article.

Student Voice in the Curriculum

The knowledge base of possibilities and effects of approaches involving students, such as student or pupil voice, youth-adult partnership or student participation, is growing. Despite the

available literature on student voice, the curriculum is seldom seen as an arena where students should be allowed to enter. In reviewing the literature (Bron, Bovill, and Veugelers, 2016), we found just two sound examples of involving students in curriculum design: the curriculum negotiation approach as initiated by Garth Boomer (1978) in Australia and the co-constructing integrated curriculum approach initiated by James Beane (1997) in the United States. Both approaches have been followed up and written about by other scholars. We have used elements of both approaches in our method and instruments for curriculum negotiation. We shall first introduce these approaches before presenting our own model.

In Australia the concept of curriculum negotiation was developed by Garth Boomer. Out of the initial article negotiating the curriculum (Boomer, 1978) developed two books that build upon ideas from the article: "Negotiating the Curriculum: A teacher – student partnership" (Boomer, 1982), and "Negotiating the Curriculum: Education for the 21st Century" (Boomer, Lester, Onore and Cook, 1992). Boomer developed a rationale as well as an approach, which gives learners greater voice in curriculum matters. He described the negotiation of the curriculum as "the deliberate planning to invite students to contribute to, and to modify, the educational programme, so that they will have a real investment both in the learning journey and in the outcomes. Negotiation also means making explicit, and then confronting, the constraints of the learning context and the non-negotiable requirements that apply" (Boomer et al, 1992, p. 14). Central in Boomer's approach is a class negotiation where students and teacher decide what questions are most relevant to pursue. The questions are developed in subgroups, based on brainstorming prior knowledge. The two books on curriculum negotiation include the work of different authors that have applied Boomer's ideas.

Beane has been involved in the development of democratic schools in the United States (Apple and Beane, 1995), especially middle schools (approximately 10-13 year-old students). In 1997 he published a theoretical book about an integrated approach to designing the core of democratic education. This developed into a practical 10-stage model (Beane, 2005). Stage one is listing individual questions that students have about themselves. In stage two students share their questions in small groups to find common questions. Students then brainstorm about questions they have about their world (stage three) and again find common ground (stage four). In stage five, students work in small groups with an adult to find themes among the different questions. These themes are discussed in the whole group in stage six. This leads to the selection of themes based on voting (stage seven), leading to a rough curriculum for a semester or school year. In stage eight, questions are ordered within the chosen themes. In stage nine, students gather ideas for activities to match themes and questions. In the tenth and final stage, units are planned around themes, questions, and activities. The co-constructed curriculum is illustrated in publications by Beane (1997, 2005) and taken further by other scholars such as Brodhagen (2007), Mikel (2011), and Fitzpatrick (2016).

Commonalities in Beane's and Boomer's approaches include:

1. They are based on the rationale that vital democratic societies call for democratic practices in schools;
2. Students can become actors when teachers trust them and willingly apply distributed leadership and share power with students;

3. The relevance of the curriculum increases when students bring forward their life experiences as “funds of knowledge” (Zipin, 2013);
4. Involving students in curriculum design must be organized in a systematic way.

A Curriculum Negotiation Model and Method

Based on the work of Boomer and Beane, we developed a curriculum negotiation method to be applied in the classroom situation in middle school or lower secondary education. The method consists of principles and aims and a student prompt sheet (available in the Appendix). The prompt sheet has two functions in this research. First, the prompt sheet is a manifestation of the curriculum negotiation approach in a classroom context: for practitioners it has proved to be a workable instrument to put theoretical assumptions and claims into practice, while for students it is a tool to articulate learning intentions based on previous learning experiences, backgrounds and interests. Second, the prompt sheet creates a focus for a series of classroom implementation examples that form case studies for our research; i.e., teachers were invited to use the prompt sheet in class. In this way, teachers had a set guideline while researchers had certainty about the way in which curriculum negotiation is organized, producing evidence that can be verified and replicated. This made it possible to compare the different cases with one another: while some variations occur, consistent factors were to be found in all cases.

In our research we want to develop greater understanding of the process of distributed curricular leadership utilizing the curriculum negotiation method. “What content and perspectives do students bring to the curriculum?” In this line of thinking we developed a model based on the work of Goodlad, Klein and Tye (1979, p. 348) and was adapted by The Netherlands curriculum institute, SLO, (Thijs and Akker, 2009: 10) as a model for analyzing the curriculum. The model distinguishes three levels: 1) the intended curriculum: ideals and the way they are described in formal documents; 2) implemented curriculum: the way intentions are perceived by teachers and developers of materials and are operationalized in lessons, and 3) the attained curriculum: the way students experience the curriculum and what they learn from it.

Our critique of this model, from the perspective of distributed leadership in a negotiated curriculum, is that it is a top-down model designed from a systems-level perspective. Its focus is to control the implementation of national policy throughout the levels of the education system. Our interest, however, is at the level of school and class: what initiative and influence can teachers and students have to take leadership over their operational curriculum? Using the same concepts of intended, operational and attained curriculum, we propose an alternative model that deepens our understanding of the intended curriculum by exposing curriculum development processes occurring in classroom contexts (Figure 2):

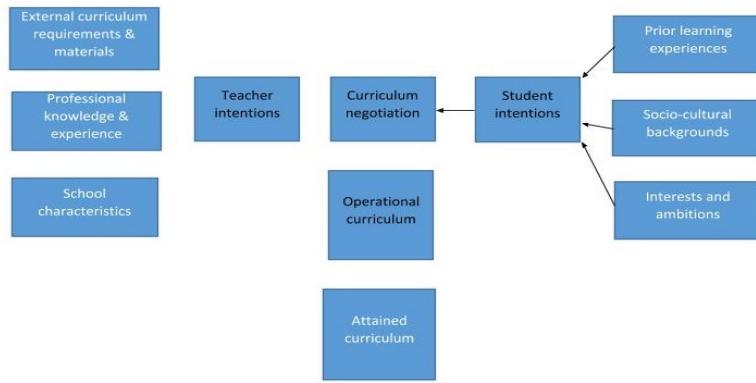


Figure 2. Curriculum Intentions in Classroom Contexts

In this model, both the teacher's and students' intentions are the point of departure. Teacher intentions are based on external curriculum requirements, available teaching, and learning material, professional knowledge and experiences, and school characteristics. Student intentions are based on prior learning experiences, socio-cultural backgrounds, interests, and ambitions. The intentions of the teacher and the students meet in the curriculum negotiation. In this process intentions are awakened and developed. This results in the operational curriculum: the actual lessons.

Case Study Methods

The results presented in this article are based on case-study research with five schools for lower secondary education in the Netherlands and Flanders. We used case studies to explore the diversity possible when power is shared with students over their curriculum in a range of settings. The rationale for using a case-study design was two-fold.

First, since examples of student participation in curriculum development are scarce, the need to explore the practice of this approach and to relate student activities to the development of democratic qualities became apparent. We recognized that explorative case studies emphasizing the importance of thick descriptions (Geertz, 1973) of the study context can contribute to our understanding of curriculum negotiation in classes and schools.

Second, case studies are particularly advantageous in that they make the study of phenomena and processes within specific contexts and in situations that researchers either cannot control or have little control over possible (Yin, 2009). Cousin sums it up as: "This research approach offers the opportunity to investigate issues where they occur and to produce descriptive and analytical accounts that invite reader judgement about their plausibility" (Cousin, 2009, p. 131).

We also want to be explicit about our view on this research, which is based both on a "social constructivist worldview" (Creswell, 2009, p. 8) and an "advocacy worldview" (Creswell, 2009, p. 9). The first is indicated in two assumptions: the curriculum is a result of a negotiation process among peers and teacher. Furthermore, the curriculum will always represent multiple perspectives that are differently, as well as collaboratively, understood and constructed. The

second (advocacy worldview) is the mere fact that students are allowed a voice in discussions on their curriculum, discussions they usually have no access to. With students being given the chance to demonstrate leadership and empowered to do so by developing negotiation skills, their voices will be more effective in the decision-making process.

Data and Data Sources

To help answer the question, “What perspectives do students bring to the curriculum?” as an example of distributed leadership of the curriculum, we used different research instruments to gather data. An important data source for the analysis of student input to the curriculum is the student prompt sheet. The prompt sheet is used by the teacher and handed out to each student to work with during the lessons. After the lesson series the teacher collected the prompt sheets and passed them on to the researcher. In some cases students handed in individual prompt sheets and in other cases they handed in one for each subgroup. This depended on whether a teacher organized the work to undertake a series of activities contained in the prompt sheet involving students working individually or in groups. This prompt sheet is intended to generate questions about curriculum issues that interest students individually, in small groups and as a class. This procedure results in a considerable number of questions. It is interesting to see what perspectives students bring to the table based on their prior learning experiences, backgrounds and interests, otherwise known as “funds of knowledge” (Zipin, 2013).

A second data source we used to analyze students’ input to the curriculum is the teacher interview. We conducted pre- and post-intervention semi-structured interviews. This way the teacher’s intentional curriculum as recorded in the pre-intervention interview can be compared with the operational curriculum as described by the teacher in the post-intervention interview. From this comparison we can develop an idea about the way the curriculum negotiation has affected the intentions of the teacher (see Figure 1). For the pre-intervention interview we used questions based on the so-called “curricular spider web” (Van den Akker, 2003) consisting of: aims and objectives, content, learning activities, teacher role, materials and resources, grouping, location, time, assessment. An interview lasts about one hour. All interviews are recorded and typed out. In the post-intervention interview the researcher and teacher looked back at the lessons and related this to the answers from the pre-intervention interview.

Next to the student prompt sheet and the teacher interviews, class observations were conducted as well as implementation of a student questionnaire. We observed each case study class at least once, sometimes twice. Each student filled in the online questionnaire directly after the lesson series was completed. The observations and questionnaires are primarily used to document the activities of students during the process and the identification of skills that students apply in this process. In presenting the results, we will briefly refer to impressions from the observations. We have used data from the student questionnaire in the description of the case-study (school) contexts.

Findings

This article is part of a larger study involving five schools (A to E) of lower secondary education in The Netherlands and Flanders, Belgium. In each case the curriculum and the context differs from that of the other cases: teachers have different aims and objectives and students raise different questions, related to their classroom topic and based on the characteristics of students and

school. As a consequence, the data on the curriculum content can only be presented case by case. To illustrate the example of distributed leadership by means of a teacher co-constructing the classroom curriculum with the students and to provide insights into the contribution students can make to the curriculum, we focus on two cases in more depth in this article. Our choice of two cases is based on two reasons. The first is pragmatic: in both cases all the research instruments were applied fully, therefore producing enough reliable data. The second rationale is based on our intention to present contrasting contexts. As we will describe further on, the two schools differ for example in pedagogy, student population and the level of curricular freedom experienced by students.

Case Study Results School A

School A is a large (1100-1500 students) interfaith Dutch school for general secondary education situated in a mid-size city (100,000-200,000 inhabitants). School A participated in our research with one experienced female teacher (Aged 40-45), four pre-vocational education classes (students are below average on cognitive abilities) and 94 students, ages 12-13, working in 26 subgroups. The school can be regarded as average and common, exhibiting a standard timetable, a curriculum based on subjects, one (subject specialist) teacher per class, teacher and textbook dominance.

The teacher in school A used the curriculum freedom that is available in the Dutch system. The external requirements for lower secondary education in The Netherlands are low. This country with around 16 million inhabitants has a longstanding statutory tradition of freedom in education with a strong trust in teachers as professionals. Government decisions about “what knowledge is of most worth” have been delicate. Input regulation (in the form of syllabi and subject-specific examination programs) and output regulation (in the form of external and internal school-leaving examinations) are in place in senior secondary education, but the Dutch Government has left curriculum decisions regarding primary and junior secondary education/middle school largely up to schools and teachers: there are only a little over 50 core objectives for schools to use for curriculum planning (Kuipers, Nieveen, and Berkvens, 2013).

Based on responses to the student questionnaire in the case study (n=94), a majority (65%) of students agree or mostly agree that teachers really listen to students. However only 42% of the students agree or mostly agree that their opinion matters in lessons. In terms of voice, a majority of students can speak freely, but not all are convinced that somebody is listening, let alone acting on student feedback. When considering the curriculum, 69% of the respondents agree or mostly agree that student input in the curriculum can improve lessons. The scores improve when the class context of the case study is considered. In the lessons given by this teacher, 81% of the students agree or mostly agree they can give their opinion during lessons. In addition, this teacher employs different pedagogical approaches, as can be concluded from the students’ answers. Therefore, an approach like group work or project-based work is familiar to the students.

To summarize, the case study context for school A is positive for negotiating the curriculum: external requirements are low, the school climate is reasonably open to student input and the teacher even more so. The participating students can be considered “familiar” as opposed to “not familiar” with a variety of pedagogical approaches related to group negotiation (Bovill, 2014).

Curricular Leadership Results from School A

The theme addressed was “appearance”, that is part of the curriculum of the subject “nature and health”, a combination of biology and health education. This subject is based on abstract core objectives and elaborated in a textbook with an accompanying workbook. Three core objectives contain elements that are addressed in the theme “appearance”. The student:

1. Learns to turn questions about physical, technological and care-related subjects into research questions, carry out research about such subjects, and give a presentation of the results.
2. Learns to understand the essentials about the build and function of the human body, link these to the promotion of physical and emotional health, and to take his/her responsibility in this.
3. Learns about care and consequently to care for oneself, for others and for his/her environment, as well as how to positively influence his/her own safety and that of others in different living situations.

At the same time, the teacher has her own view on the theme. Table 1 gives an overview of the teacher-intended curriculum, taken from the pre-intervention interview.

Table 1: Teacher A, Intended Curriculum

Teacher's Intended Curriculum	
Content	<ul style="list-style-type: none"> • Function and structure of the skin • Sunbathing and its effect on the skin • Wounds • Skin care and cosmetics • Plastic surgery, piercings and tattoos • Functions of clothes, different fabrics, uniforms and the costs of clothing

Skills and attitudes	<p>Students can:</p> <ul style="list-style-type: none"> • relate lesson content to own life; • make more conscious decisions about their personal hygiene, tanning and clothes; • regard all people as equal and respect differences; • aware of the influence of their culture on their choice of clothing; • active learners; • express their thoughts; • work independently on a task; • present results of their findings.
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Processes in Class

At the start of the lesson series the teacher introduced the curriculum negotiation method by saying: "This time we are going to turn everything around. Instead of me telling you what to do and what to learn, you can tell me what you find interesting. You are in control!" The students then worked for two periods using the prompt sheet. Each individual listed prior knowledge and formulated learning questions. After that they formed subgroups and made word-webs out of prior knowledge and discussed their different learning questions to reach an agreement on the most interesting and relevant questions. This led to 95 questions, developed by the 26 subgroups. A selection of these questions was used in the operational curriculum (Table 5).

The teacher described difficulties she found working this way. She found it challenging and fun but also intense and straining, and not just organizationally. Handing over the decision-making in curriculum content caused anxiety. This situation was awkward and required she step back and give things time and space to unfold. This was a new role, and for it to work, she must always be aware of her aims and goals as a teacher. A sense of direction must be maintained, but at the same time, she must dare to be open to student input. This led to feelings of insecurity: "Am I not working directionless? Are the students not working directionless? How can we assess the results of this course if the goals are shifting?" To deal with these questions, the teacher decided for herself the topic core and what was to be included in the forthcoming lessons (intentional curriculum, Table 1). She kept this in mind as a reference point and did her utmost to let the rest be open to student input.

During our observation we noticed that students could be focused but some groups seemed to hesitate when formulating questions. It seemed as if they were waiting for instructions from the teacher. A quarter of the students were affected this way and not focused sufficiently on task. Interestingly, these were all groups of boys. The other three quarters of the groups managed to

make progress. In these groups one or two students clearly took the lead to work toward results. These were mixed or all-girl groups.

Student Input

Two researchers independently analyzed the student prompt sheets and selected questions they regarded as interesting student perspectives that reflected genuine curiosity and wonder, such as: "What is the use of hair?" Unfortunately, many original questions did not last in the negotiation process. The youth perspective questions clearly reflect the worries students' experience, perhaps on a daily basis: "What is the connection between feelings of being in love and appearance?" The theme appearance is well suited for the curriculum negotiation method because of its direct relation to life experiences and the lives of youth. Students also proposed questions that we consider more standard curriculum questions or questions that a teacher would also want to address. These were of a preventive nature (prevent tooth decay and skin cancer) or knowledge perspective: hereditary aspects. Through providing questions that resonate with the teacher's intended curriculum, the students legitimated the curriculum.

The Operational Curriculum

The operational curriculum is that which eventually happens in class. Table 2 shows the operational curriculum presented in terms of learning questions. In the curriculum negotiation method this is the result of the teacher-student class negotiation. However, the teacher involved adapted this phase of the method: instead of performing a class negotiation for each of the four participating classes, she decided to develop an overall set of questions for all four classes. The teacher did her utmost to stay close to the student questions so that students could recognize their contributions. This way of working made the task manageable for the teacher. It also assured the teacher that there was a core curriculum for all classes (a selection of mandatory questions) while maintaining the principle that students have a choice in what they find relevant to learn.

The teacher had noticed that students were very eager to work on their own questions. The lesson series was concluded with presentations by the different subgroups of students. Here again it was obvious to the teacher that groups addressed the mandatory core questions, but most effort had gone into answering their own questions.

Table 2: Operational Curriculum

Subtopic	Questions (bold = mandatory for all)
Skin	<p>What is the structure of skin tissue?</p> <p>Why is skin so important?</p> <p>What happens when you get a sunburn?</p> <p>Why do some tan more easily than others?</p> <p>How does sunscreen lotion work?</p> <p>What happens when you don't shower?</p> <p>What happens when you sweat?</p> <p>What happens when you blush?</p>

Acne	How do you develop acne? How does acne lotion work? What can be done when acne lotion doesn't work? What happens when you squeeze a pimple? What is the relation between acne and cosmetics?
Hair	How does hair grow? Why do you have to treat your hair well? What is dandruff? Why is washing hair too often not good? How can you get lice?
Teeth	What is the structure of a tooth? Why is it important to brush teeth? What is tooth decay, plaque, tartar, gum disease? What is a good tooth care?
Cosmetics	Why are cosmetics used? Why especially do girls use cosmetics? Why do people want plastic surgery?
Clothing	What kind of fabrics are there and what are their features? Why do people follow trends? Why are there so many different shoes? Why do some people wear black clothes?
Tattoos	What is a tattoo Why does a tattoo stick? What can you do when a tattoo goes wrong? Why do some people have tattoos on their face?

Analysis

When analyzing the process from the perspective of student input to the curriculum we tried to establish just how seriously student input was taken: did the teacher listen and was she influenced by their input? To do so, we compared the intended curriculum to the operational curriculum. The changes that the teacher made can be regarded as a result of student influence and can be considered an example of distributed leadership. The operational curriculum consists of 33 questions of which nine are mandatory and 24 are optional. Out of the 33, 32 are questions formulated by students. The teacher only added one. So we can conclude that students greatly influenced the operational curriculum. However, after analyzing the teacher intentions and comparing them with the total of 94 student questions, we found that the teacher could have employed more of the student questions that reflect her intentions.

When asked about her opinion regarding student input, the teacher mentioned that the topic of wounds was lost in the process and that more attention was given to piercings and tattoos than she considered necessary. Clearly, students are fascinated by these topics. The teacher also found that the operational curriculum was now more aligned with the life of students: their personal lives, the relation with family matters and their interest in piercings and tattoos. Furthermore, in the operational curriculum there is less emphasis on equality and the influence of culture.

What improved greatly however were the teacher intentions mentioned under “skills”? The negotiation process as it was organized does not lead to students suggesting skills. But in the process many skills are practised, such as “to relate lesson content to own life”, “express one’s thoughts” and “be an active learner”. These are skills that the teacher considers important but are too often neglected because of a focus on content. Skills categorized as “work independently” and “present results” were visible in most groups except those where students were not able to establish good working relations.

Case Study Results from School E

School E participated with one class of 14 students ages 14-15. Students are of above-average cognitive ability. The male teacher (aged 35-40) is moderately experienced in teaching. School E is a school for general secondary education in Flanders, Belgium. Our case-study school is part of a large (1500-plus students) school offering different streams. The location that participated in the case study is fairly small (less than 400 students) and started more or less as an experiment to offer general education based on the pedagogy of Celestin Freinet. The Freinet pedagogy is based on a number of principles, including a high trust in the capacities and initiative of children. In his work Freinet valued experiences and co-constructing knowledge through cooperation and student experiences, finding these the starting point for education. The school culture is to promote cooperation between all members including teachers and students. Projects, research, out of school activities, cross-class working groups, and hands-on experiments are promoted.

The school curriculum in Flanders is based on standards set by the government that have been further elaborated by the educational network for public education or “Gemeenschapsonderwijs”. Nevertheless, each school decides how these standards can best be achieved, resulting in a large degree of freedom for schools when compared to most other European countries (Kuiper, Akker, Letschert, and Hooghoff, 2008).

Looking at the way the students experience the school climate, they were found to be overwhelmingly positive about participation opportunities in school. Student responses indicate they feel free to speak their minds, that expressing oneself is stimulated in school and that most teachers express a sincere interest in what students have to say. All students think it is important they have a voice, and that student voice can improve the lessons.

We consider school E well suited for the curriculum negotiation method: it seems well fitted to the school culture and experiences of students and teachers. The external curriculum requirements are moderate but the school enjoys large pedagogical freedom.

Curricular Leadership Results from School E

In the pre-intervention interview the teacher explained that he carefully stuck to the curriculum requirements and relied on the textbook as the reference point for curriculum

requirements. This moderately experienced teacher used the pedagogical freedom available in a school for Freinet pedagogy, but did not experience curricular freedom at all despite the moderate external requirements in Flanders. In the state curriculum for secondary education different outcomes related to the theme “ecosystems” are included. There are general outcomes for the sciences, for example:

1. When looking for solutions for sustainability issues in society, students can apply scientific principles related to the use of natural resources and energy, biodiversity and habitat.
2. Next to the general outcomes there are specific outcomes for biology:
3. Students can give examples of the interaction between organisms and their environment (...);
4. (...) describe and clarify the concept ecosystems, based on examples;
5. (...) describe a simple matter cycle and energy cycle in an ecosystem;
6. (...) based on examples, prove the importance of biodiversity in ecosystems.

These curriculum requirements are more detailed than in the Dutch curriculum (see school A), but they still leave more than enough opportunity for teachers and students to develop a context specific school or class curriculum. The teacher in school E had not really thought about formulating his own curriculum intentions. When asked what the essence of the theme was and how the theme is relevant for students and society, the teacher eventually came up with some examples (Table 3).

Table 3: Teacher-Intended Curriculum

Content	What is ecology?
	Different relations in nature
	Ecological systems
	Concept: biotope
	Awareness of human influence on ecosystems
	Human influences: pollution, climate change
Skills	Research on ecological systems
	Group work

Processes in Class

The teacher from School E is strongly attached to the external curriculum requirements and wants to make sure all are met. In the interview the teacher explained that he carefully stuck to the external curriculum requirements and relied on the textbook as a reference point for the curriculum. In the interview it became apparent that the teacher had not considered the option of changing the

content of the curriculum. Also, the teacher did not have any outspoken ideas of larger aims about how education could add to the development of students and the opportunities provided by the theme ecosystems to do so. After giving it some thought the teacher hoped students would be interested in ecology and be aware of the influence of humans on the ecosystem. To this teacher the curriculum is regarded as external and not open to debate.

On the other hand, the teacher had used various didactical approaches and had organized student input in the delivery of the curriculum. He used a variety of methods ranging from students providing lessons to peers, discussing content, involving colleague teachers as specialists, organizing field trips and doing scientific tests and experiments. This shows that the teacher does have a well-developed professional attitude and takes initiative.

In School E, the teacher had the students work with the prompt sheet as it was intended by following the sequence of steps. In one of our observations in this case study, we noticed a strong student commitment to the process of exchanging prior knowledge and developing questions. This process had yielded amazing results: the students developed rich word webs in step 2 and step 3 yielded many interesting questions, some of which are presented further on (student input).

However, after concluding the student negotiations on questions in step 3 of the prompt sheet, the teacher handed out an overview of the concepts as they are included in the relevant chapter of the textbook and asked the students to add questions to their selection inspired by the textbook. By doing so the open situation where students developed their own questions ended and a new situation started. In the new situation student input was traded for textbook input. The teacher's reluctance to leave curriculum decisions to the students became apparent as well as a fear the curriculum requirements would not be met. In the post-intervention interview the teacher explained that he wanted to make sure the curriculum requirements were met. But in future cases he would rely more on the student input.

Student Input

In the first instance the students as a class had formulated 21 questions, coming from the different groups working with the prompt sheet. All of these 21 questions were used in the final selection. After the teacher had handed out the overview, another 34 questions were added, of which 28 returned in the final selection. It is also noticeable that of these first 21 questions developed by students, eight started with "what is" compared to 21 "what is" questions among the 34 taken from the textbook. We consider "what is" questions more simple knowledge questions compared to questions about insight and application. This seems to indicate that students had thought over the first 21, i.e., their own questions more deeply than the 34 questions they added after consulting the textbook. The handout with concepts from the textbook led to many simple questions in which students turned a complex concept into a simple "what is" question, i.e., "What is parasitism?".

Examples taken from the first 21 original student questions:

1. What are differences and similarities between a carbon and a nitrogen cycle?
2. To what degree do humans influence nature and what do humans do for nature in return?
3. Why do animals and insects mutate?
4. What went wrong with Biosphere 2 [an experiment with an artificial biosphere that was covered by the media at the time of the case study]?

5. What is the value of parasitism, mutualism and commensalism?
6. Why is it important to have research centers?

The questions show how much students already know about ecosystems, even before the lessons have actually started. This reflects the interest and background of the students in this class.

Operational Curriculum

Eventually all 21 questions from the first round of working in subgroups were used and 28 questions developed by students after studying the textbook were also used, covering about the whole textbook chapter. Further discussions between the teacher and the class focused on ways to answer the questions, which is also an expression of student voice in pedagogical matters. Different practical scientific research methods were added to the curriculum: measurements of particulate matter (in air); water quality; testing the self-cleaning ability of water cycles; measuring the water quality and algae; perform a simulation of greenhouse effect. Though not part of our research focus, this does show how students can be involved in decision making on other aspects of the curriculum.

Analysis

In Case E a mixture of positive and negative examples of student voice were visible. Student voice in the school was high when it comes to school governance and school climate and on the level of the lessons we also noticed a high level of student voice towards pedagogical approaches. The curriculum in the sense of content however was not regarded as open for improvement or alterations by the teacher or by the students.

The external curriculum requirements were moderate but the teacher's intended curriculum was limited. This lack of mastery over curriculum content and an experienced pressure to meet the curriculum requirements by covering the textbook resulted in the teacher adding an element to the negotiation process: handing out the content from the textbook chapter. Looking at the formal requirements makes us wonder if the external curriculum pressure is real or perceived by this teacher. It seems that the requirements are open for further elaboration by students. Nevertheless, the teacher's experienced curricular pressure has influenced the way he has used the negotiation method. This situation makes it difficult to compare intentions with operational curriculum. It is clear, however, that all the student input was used, but more questions taken from the textbook were added.

Still, the process has been worthwhile because students worked with the theme's content in an intense way and clearly developed a sense of ownership of their curriculum despite the introduction of an additional step in the process with the introduction of the textbook.

Another positive element is that the curriculum became organized according to the questions, making the lessons more engaging as students participated in finding solutions to these questions. One can wonder, however, what will happen if the signal of, "The textbook is the curriculum", is repeated more often. At one point students may come to believe that the curriculum is not open for negotiation and their input is in vain. On a more positive note, the teacher expressed that future cases would rely more on student input. It is clear that the negotiation process taught the teacher that students can have valuable input to the curriculum.

Conclusions and Discussion

In this article the example of distributed leadership by curriculum negotiation was presented and illustrated by two case studies. Using the terminology of distributed leadership, the macro function of curriculum negotiation is two-fold. First, there is the development of a democratic citizenry. This development is stimulated by offering students opportunities to participate in real decision making on matters that affect them, like their own curriculum. The focus of this article is the second macro function: curriculum improvement. That is, student contribution improves the relevance of the curriculum. The case studies illustrated the process wherein students are actors with prior learning experiences, interests and ambitions, partly related to their backgrounds as illustrated in the *Curriculum intentions model* as presented in this article. The curriculum negotiation method is a way to organize such experiences. The case studies illustrate the way the student prompt sheet resulted in questions students want to answer in their forthcoming lessons.

We presented a model that takes the process curriculum as given and puts curriculum negotiation in the center, expressing shared ownership of the curriculum on the classroom level by both teacher and students and thus providing opportunities for distributed curriculum leadership. It is an alternative to curriculum models that often take top-down models of leadership as a point of departure. The model requires teachers to be explicit about their intended curriculum and to help students become aware of their intentions as well.

The *Curriculum intentions model* has been explored for the first time in the case studies as presented. More research is necessary to gain a deeper understanding of the way students' and teacher's intentions are formed. Certainly this is the case for the way in which the teacher's intended curriculum is formed based on external requirements, professional knowledge and experience as well as school characteristics. We noticed that contexts and especially external curriculum requirements and teachers' professional knowledge and experiences have a large impact on the operational curriculum. The current emphasis on the role of the teacher in improving the quality of education makes this aspect even more relevant. The case studies have made it clear that there are prerequisites for shared curriculum leadership, the most important one being the curriculum as a process. Involving students in the curriculum assumes curriculum as a living entity open for discussion, scrutiny and improvement (Joseph, 2011; Pinar, 1975; Stenhouse, 1975). In democratic societies with a well-trained teaching staff, one might expect teachers to have or claim a degree of ownership over their curriculum. The curriculum negotiation method can be a catalyst of curriculum thinking amongst teachers.

Regarding the curriculum as a process provides the right circumstances and space for students to have a voice, be listened to and have an influence or power over their situation (Cook-Sather, 2006; Lundy, 2007). Only a non-prescriptive process curriculum offers this space for teachers and thus for students. The case studies revealed a difference in the feeling of ownership over curriculum content. One teacher felt the ownership and was able to develop a rationale for a curriculum theme, while the other teacher regarded the curriculum as a no-go area for teacher influence, let alone students. It is important for teacher to be aware of their role in allowing students to have a genuine voice in curriculum matters.

As far as the students are concerned, the model clearly helped them become conscious of and able to express their intention for the curriculum in the form of learning questions. A number of these questions reflected the socio-cultural background of the students and youth perspectives

in general. We found that prior learning experiences and students' interests are valuable input for classroom-based curriculum design and that negotiating in small groups helped reveal prior learning and develop questions. One teacher noticed that during the lessons following the negotiation process all groups addressed the mandatory core questions, but that all four participating classes expended the most effort answering their own questions, demonstrating that the curriculum had become more relevant to the students (Bron and Veugelers, 2014). Relevance is considered a quality criterion of curricula (Nieveen, 1999). In both cases, students were motivated and engaged by the negotiation approach but in one case their power was strongly limited. If the process is repeated more often in such a situation, students might become disengaged when they realize their input is not listened to and is in fact tokenistic, as in the context of Hart's participation ladder (1992) and Bovill and Bulley's (2011) "Ladder of student participation in curriculum design."

The results of curriculum negotiation are promising and exemplify distributed curriculum leadership. Negotiation processes are also messy. Teachers provide opportunities for students to participate, but they also take back the initiative; for example the teacher designs the final set of questions and determines which questions were or were not mandatory. Also in curriculum negotiations teachers are the professionals that safeguard the curriculum based on their knowledge of external requirements and their experiences. Furthermore, we noticed that students' and teachers' intentions are partly lost in the negotiation process or are replaced. Understanding these processes required more detailed analyses using different instruments like observations and more frequent interviews with teachers and students.

Our case studies showed that group dynamics are an important factor if results are to be obtained. In groups where there were leaders who stood up and kept the process going, results were reached. Other groups suffered from a lack of leadership and little progress was made. Therefore, aspects of leadership that might play a crucial role in the negotiation process need further exploration.

One thing that stood out is that many of the skills teachers considered important were well addressed, to the point that might prove hard to achieve in regular settings. Student voice in curriculum matters is valid as a pedagogical approach to the development of certain skills (Bron, Bovill, Van Vliet and Veugelers, 2016). This aspect of developing democratic qualities through negotiation is going to be described and presented in the near future as part of our case study research. The point of departure is that all students participate and thereby have the opportunity to develop democratic qualities. One thing that is worth considering: is distributed leadership also a quality we want to see developed in all students, or just in those who are willing and able?

The idea of distributed leadership is certainly relevant in today's ideas about realizing curriculum change by involving networks of schools and teachers instead of governmental experts. The involvement of students is another contribution to extending the model of distributed leadership.

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Appendix: Prompt Sheet

Student Worksheet: Steps, Aims and Operationalizations (Bron 2013)

Aims related to Worksheet Steps 1 - 4	Aims	Examples of Operationalizations
Step 1: <i>What I know and want to find out</i>	Reflect on prior knowledge; Draw conclusions about one's own prior knowledge to formulate questions for learning.	Reflect on prior (learning) experiences, use introspection, retrospection, and brainstorm. Take one's own identity (background, interests, and values) as point of departure. Trying to be original and think creatively.
Step 2: <i>Exchange of prior knowledge in groups</i>	Communicate ones findings with others (voice) Relate knowledge put forward by others to one's own (experience diversity). Be responsible for the cooperative development of a group product (democracy).	Express and clarify ones prior knowledge Interpret, stimulate and take serious others' clarifications Make sure everyone's contribution is taken into account Develop a word web
Step 3: <i>Negotiate and formulate group questions</i>	Actively participate in negotiations and decision-making in small groups Monitor and influence the group dynamics	Explain, convince, give arguments Listen, ask for clarifications or arguments Weigh arguments and interests, discuss differences of opinion Decide together and accept group decisions Reflect on one's own questions for learning and reformulate if necessary Be sensitive to the wellbeing of group members during the process Express discomfort or feelings of injustice
Step 4: <i>Negotiate a communal set of questions with peers and teacher</i>	Actively participate in negotiations and decision-making in larger groups Negotiate what the teacher considers non-negotiable (who says this? Why)	Weigh teacher's arguments Express group positions and one's own.

	<p>should we believe this? Who benefits if we act upon it?) And accept the outcome.</p> <p>Prioritize and determine class questions for learning.</p>	<p>Apply insight in roles and responsibilities of students, teachers, school leaders and government.</p> <p>Accept decisions and temporarily regard these as final</p>
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Figure 1. Forms of Curriculum

Intended	Ideal	Vision / Rational
	Formal/Written	Intentions as specified in curriculum materials
Implemented	Perceived	Curriculum as interpreted by its users (especially teachers)
	Operational	Actual process of learning and teaching (curriculum in action)
Attained	Experiential	Learning experiences as perceived by learners
	Learned	Learning outcomes of students

Figure 2. Curriculum Intentions in Classroom Contexts

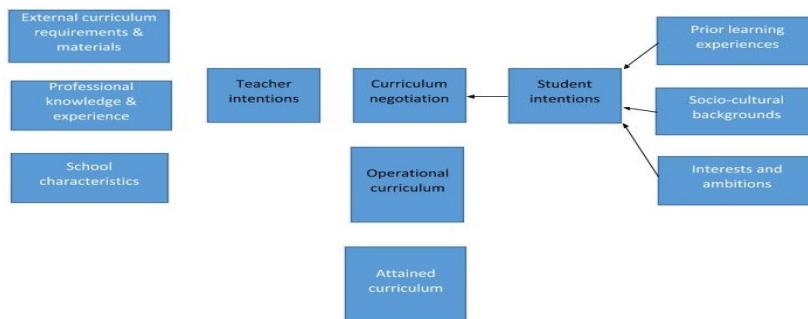


Table 1: Teacher A, Intended Curriculum

Teacher's Intended Curriculum	
Content	<ul style="list-style-type: none"> • Function and structure of the skin • Sunbathing and its effect on the skin • Wounds • Skin care and cosmetics • Plastic surgery, piercings and tattoos • Functions of clothes, different fabrics, uniforms and the costs of clothing

Skills and attitudes	<p>Students can:</p> <ul style="list-style-type: none"> • relate lesson content to own life; • make more conscious decisions about their personal hygiene, tanning and clothes; • regard all people as equal and respect differences; • aware of the influence of their culture on their choice of clothing; • active learners; • express their thoughts; • work independently on a task; • present results of their findings.
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Table 2: Operational Curriculum

Subtopic	Questions (bold = mandatory for all)
Skin	<p>What is the structure of skin tissue?</p> <p>Why is skin so important?</p> <p>What happens when you get a sunburn?</p> <p>Why do some tan more easily than others?</p> <p>How does sunscreen lotion work?</p> <p>What happens when you don't shower?</p> <p>What happens when you sweat?</p> <p>What happens when you blush?</p>
Acne	<p>How do you develop acne?</p> <p>How does acne lotion work?</p> <p>What can be done when acne lotion doesn't work?</p> <p>What happens when you squeeze a pimple?</p> <p>What is the relation between acne and cosmetics?</p>
Hair	<p>How does hair grow?</p> <p>Why do you have to treat your hair well?</p> <p>What is dandruff?</p> <p>Why is washing hair too often not good?</p> <p>How can you get lice?</p>
Teeth	<p>What is the structure of a tooth?</p> <p>Why is it important to brush teeth?</p> <p>What is tooth decay, plaque, tartar, gum disease?</p> <p>What is a good tooth care?</p>
Cosmetics	<p>Why are cosmetics used?</p> <p>Why especially do girls use cosmetics?</p> <p>Why do people want plastic surgery?</p>
Clothing	<p>What kind of fabrics are there and what are their features?</p> <p>Why do people follow trends?</p> <p>Why are there so many different shoes?</p> <p>Why do some people wear black clothes?</p>
Tattoos	<p>What is a tattoo</p> <p>Why does a tattoo stick?</p>

	What can you do when a tattoo goes wrong? Why do some people have tattoos on their face?
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Table 3: Teacher-Intended Curriculum

Content	What is ecology? Different relations in nature Ecological systems Concept: biotope Awareness of human influence on ecosystems Human influences: pollution, climate change
Skills	Research on ecological systems Group work