

Making the Transition from Teacher-Centered Teaching to Students' Active Learning: Developing Transformative Agency



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Abstract This chapter focuses on a local school development project initiated by teachers who experienced students' lack of engagement, passive learning, and absence from school. In order to achieve more active learning among the students, the teachers built an active learning classroom and set out to develop teaching methods appropriate for the new classroom. This process turned out to be more complex than expected and raised questions not only about the teachers' teaching, but also about their learning and more specifically about how they as a collective created transformative agency. In this chapter, we highlight how the teachers gained transformative agency and the situations that characterized this process. Inspired by cultural historical activity theory, we pay attention to *stimuli* that helped the teachers to bring forth and deal with *conflicts of motives* that led to *break-outs* from the teacher-centered teaching and thereby created *transformative agency* toward a classroom practice characterized by students' active learning.

Keywords Teacher-centered teaching · Students' active learning · Transformative agency · Expansive learning · Conflict of motives

Introduction

This chapter focuses on a local school development project initiated by teachers in one Swedish upper secondary school who experienced students' lack of engagement, passive learning, and absence from school. Based on these experiences from daily practice, the teachers saw a need for expanding their repertoire of teaching methods toward a teaching practice characterized by students' *active learning*. Teaching for active learning is about students creating understanding, meaning, and new ideas (Barr & Tagg, 1995; Carlgren, 2011; Schweisfurth, 2015). In this type of classroom practice, the teacher has the role of encouraging students to expand their

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thinking beyond consumption-type behavior and the traditional reproduction of existing knowledge in dialogue with peers by providing them with student-driven tasks and by using different physical and digital materials (Jahnke et al., 2017; Meyer, 2015). From the literature, the teachers came across the concept of the *active learning classroom* (ALC) (Baepler et al., 2014, 2016), which in studies on higher education has shown promise as a transition agent from teacher-centered teaching to students' active learning (Baepler et al., 2014, 2016; Brooks, 2011; Hyun et al., 2017; Lundahl et al., 2017; Whiteside et al., 2010). The teachers saw ALC as a possible change agent and believed that this new type of classroom would help them in their efforts to develop a teaching practice characterized by students' active learning. Thus, they decided to construct an ALC and to develop teaching methods appropriate for the new classroom. In parallel, they contacted the local university to involve researchers in their development project, and this resulted in a collaboration between the teachers and the researchers.

We understand the process that took its starting point from the decision to make a fundamental change in teaching methods to be what Engeström & Sannino describe as *expansive learning*—a cyclic process in which teachers are “involved in constructing and implementing a radically new and more complex object and concept for their activity” (Engeström & Sannino, 2010, p.2). Ideally, expansive learning is based on a 7-step cyclic process that includes the collective learning actions of (1) questioning, (2) analyzing, (3) modeling a new solution, (4) examining and testing the new model, (5) implementing the new model, (6) reflecting on the process, and (7) consolidating and generalizing the new practice (Engeström & Sannino, 2016). In accordance with these seven steps, the teachers questioned the classroom practice (1), found their teaching to be too teacher-centered (2), saw the concept of students' *active learning* as a means to achieve a transformation of teaching (3), contacted the local university and planned and designed a new classroom space and teaching methods adapted to the new classroom in dialogue with the researchers (4), started to teach in the new classroom (5), reflected, discussed, and designed the teaching in conversations with the researchers (6), and presented their experiences from the project to other teachers at the school and encouraged them to start to teach in the new classroom (7).

This chapter aims to describe and analyze the teachers' process of developing a teaching practice characterized by students' active learning as well as the teachers' own expansive learning over the course of the project. We focus on the teachers' enacted teaching practice in the new classroom and their reflections on practice in conversations with the researchers (5, 6). We concentrate the analysis on how the teachers gained transformative agency and the situations that characterized this process. Inspired by cultural historical activity theory (CHAT), we scrutinize the process in detail, paying attention to the *stimuli* that helped the subjects (the teachers) to bring forth and deal with *conflicts of motives* that led to *break-outs* from the teacher-centered teaching and thereby created *transformative agency* (Engeström & Sannino, 2016) toward a classroom practice characterized by students' active learning.

Transforming Pedagogical Practice

There is a large and increasing interest among researchers and practitioners regarding the interaction between the physical learning environment and pedagogical practice. This is manifested, for example, in a growing number of case studies on the transition from traditional classrooms to innovative learning environments (French et al., 2020; Cardellino & Woolner, 2019; Mulcahy & Morrison, 2017; Sigurðardóttir & Hjartarson, 2016; Mulcahy et al., 2015; Woolner et al., 2014; Gislason, 2010). In addition, we see increased attention to school and classroom design in both supranational (e.g., OECD, 2013, 2017) and national school policies. These policies usually promote students' active learning and are operationalized by enthusiastic stakeholders outside daily school practice (Sigurðardóttir & Hjartarson, 2016) or by locally based practitioners (head teachers and teachers) who are translating the policy into their local context (Garcia-Huidobro et al., 2017; Tse et al., 2015). This latter way of enacting policy highlights that "change in school is a socio-cultural process" (Robertson, 2006, p. 1). In other words, it is a collective process in which teachers, and sometimes also head-teachers, are front runners in educational change (Garcia-Huidobro et al., 2017).

One component for successfully transforming teacher-centered teaching toward teaching for active learning is teachers' agency (Lockton & Fargason, 2019). However, enacting agency in order to transform teaching and to achieve educational change is a complicated process because it represents boundary-crossings from a dominant practice to a non-dominant practice (Pettersson & Olofsson, 2015; Sannino, 2008). In relation to the development project in focus here, students' active learning represents a non-dominant practice and teacher-centered teaching represents a dominant practice. The two practices differ mostly concerning how power and control are distributed between the teacher and the students in the classroom (Bernstein, 2000), and the ALC is designed with principles where power is distributed from the teacher to the students (Bergström et al., 2020). This means more specifically that students are invited to take over some of the tasks that in a teacher-centered setting are considered to belong to the teacher. Changed teacher and student roles can also be discussed in the framework of control. As demonstrated in a meta-study by Bernard et al. (2019), control is either retained by the teacher (e.g., when lecturing) or distributed to the students (e.g., when the teacher acts as a facilitator who clarifies and encourages). By targeting different categories, for example, the teacher's role and the pacing of classroom activities in terms of how quickly different assignments are performed, the authors highlight how control in the classroom can shift. The teacher's role can span from being authoritative to the teacher being an equal partner, and the teacher's control over the pacing can vary from very strong to almost non-existent (Bernard et al., 2019 p. 1). The mechanisms behind control in the classroom highlighted by Bernard et al. (2019) are of relevance for our analysis because, as we will show later on, the teachers we studied became quite involved in experimenting with control over, for example, the pacing of activities in the new classroom space.

The Case Study

The upper secondary school was a small school with a narrow range of programs and consisted of 200 students and 18 teachers. The school organized its daily schedule in blocks of 80-minute lessons. The three teachers who were the focus of this study had been working as teachers for 6–12 years, with one teaching languages as part of the aesthetic program, one teaching STEM subjects as part of the technical program, and one teaching computer programming as part of the electrical program. A participatory design process was used where the three teachers formed the project group together with the three researchers who collected the data, but who also acted as pedagogical advisers and participated in the teachers' team meetings throughout the project. In dialogue with the researchers, the teachers designed a classroom out of a space that was not used for anything specifically (a number of years ago it had housed a student cafeteria) and started to give lessons there. The new classroom contrasted sharply with the other classrooms of the school that were traditionally designed and furnished with a whiteboard, a screen for mirroring the teacher's laptop, and the teacher's desk in front and student desks in rows, thus classrooms with a clearly defined teacher space at the front. The new learning environment, in contrast, did not have a clear teacher space; in fact, it had no teacher whiteboard, teacher screen, or teacher desk. The classroom had no obvious front or back and consisted of only two walls. Based on study visits and literature studies conducted by the teachers, they decided to provide the room with flexible round tables for 3–6 students. Furthermore, each student table had a whiteboard and a smartboard with a projector that could be connected to a student laptop (Fig. 1). Hence, the new classroom was designed for students' work and activities rather than the teacher's activities. The overall design of the classroom, including the student tables and equipment (whiteboard, smartboard, projector, laptop access, etc.) was based on the idea of promoting students' collaborative work and showing and discussing issues within the group, with the other groups in the class, and with the teacher who would circulate around the classroom.

Cultural-History Activity Theory

CHAT (Engeström, 2001, 2015) was found to be informative for analyzing the teachers' process of making the transition from teacher-centered teaching to students' active learning. A first inspiration was Sannino's (2008) and Pettersson and Olofsson's (2015) work on dominant and non-dominant activities, which led us to recent developments of CHAT and the theory of expansive learning (Engeström & Sannino, 2016). A core idea in CHAT is that learning and development work never takes place in a vacuum, and it is always affected by its history (Pettersson & Olofsson, 2015; Sannino, 2008). For example, in relation to our study, a long tradition and school culture featuring teacher-centered teaching affected the transformation process. CHAT has various interpretations and a rich conceptual apparatus. In

Fig. 1 The upper secondary schools' active learning classroom



our analysis, we draw on the concepts of *stimuli* (*first stimulus* and *second stimulus*), *conflicts of motives*, *break-outs*, and *transformative agency* (Engeström, 2015; Engeström & Sannino, 2016). *Stimuli* represent elements that are added to the process of learning and development work in one way or another. The *first stimulus* represents what Engeström and Sannino (2016) describe as the starting point for the process, namely, acknowledging and defining the problem that later will be subject for change. In our study, the first stimulus was considered to be the teachers' perceived problem of passive students and teacher-centered teaching. When *second stimuli* (we understand Engeström and Sannino to mean that there can be several "second" stimuli) are brought into the process (or bring themselves into the process), they impact the process in various ways, for example, by creating *conflicts of motives* (contradictions and tensions in practice) that can lead to *break-outs* (actions and events that bring the process forward), but also to new conflicts of motives or to status-quo situations when the process pauses or stops. *Transformative agency* represents the teachers' agency to bring the transformative process forward, in other words, the initiatives and actions they take to address the stimuli and to overcome conflicts of motives as they navigate the landscape of tensions that occur between the new and the old practice and between the traditional and dominant activities and the new and non-dominant ones.

The Design and Construction of the Study

This study was based on a qualitative research design (Patton, 1990) where a group of three teachers collaborated with researchers for three years, starting in the autumn of 2017 and ending in 2020. The project was conducted in accordance with national and international ethical guidelines (Swedish Research Council, 2017) and was approved by the regional ethical board before starting (Regional Ethical Board dnr 2017-402-31).

During the first year of the project the new classroom, the ALC, was designed and built and new pedagogy (teaching and learning methods) were discussed. The teachers started to teach in the new classroom in the second year of the project, and the researchers followed their teaching over a 6-month period, which is the focus of this chapter. We video recorded their teaching, took notes during the observations, and conducted teacher–researcher conversations (see below) throughout the study period. The analysis presented in this chapter draws on teacher–researcher conversations in terms of informal conversations related to the video-recorded and observed lessons and the formal teacher–researcher conversations (the primary data) as well as the video-recorded lessons themselves (the secondary data).

With the teachers, the formal conversations were scheduled for five meetings during the 6-month period, while the informal conversations comprised data from teacher–researcher conversations, for example, during classroom observations. The formal conversations were conducted as focus-group conversations in which the teaching was discussed and reflected on together with the researchers. Each formal conversation concentrated on the teachers' and researchers' reflections on the teaching that had been performed, with inspiration and use of video-stimulated recall (cf., Consuegra et al., 2016). When video-stimulated recall was used, the selected sequences were chosen to be typical examples of general approaches among the teachers, or what we as researchers considered to be contrasting approaches. Thus, the back and forth dialogue on practice was based on our common classroom experience. The teacher–researcher conversations were audio-recorded, and in total, the recorded conversations lasted for 6 h and 13 min.

We used video recordings as secondary data, more specifically three video recordings from when teachers were teaching in ordinary classrooms and 12 video recordings from lessons performed in the new classroom. When recording, we used a Canon XA11 video camera equipped with two-channel audio recordings. Thus, audio was captured through the use of two microphones, one microphone on the teacher and a second microphone on the camera capturing class audio.

The video recordings were processed in three steps. In the first step, the first author watched all of the video recordings and made broad notes in an Excel sheet. During this step, the sequences of the classroom observation were described as a timeline in terms of (a) the action taking place, (b) the duration of the action, (c) interactions (teacher–student and student–student), (d) type of setting, and (e) quotes from the communication between the teacher and the students and between the students with

each other. In the second step, the Excel sheet describing the classroom observations was circulated among the research team and discussed. When the entire data sheet had been discussed, the research team selected typical parts that represented (i) the introduction of the lesson, (ii) the sequence when students were working, and (iii) how the lesson was closed. In the third step, the selected parts were fully transcribed, both in terms of the audio and in terms of movements, actions, and gestures. Parts of both the transcriptions and video recordings were used as topics for discussions in the formal teacher–researcher conversations.

The formal and informal teacher–researcher conversations were analyzed using thematic analysis highlighting the two perspectives of “seeing” and “seeing as” (Boyatzis, 1998). We coded and categorized the data trying to find patterns that characterized the teachers’ process (to *see* something), thus identifying descriptive themes (cf. Wolcott, 2000), and then we scrutinized the identified themes by interpreting the process in relation to the theoretical framework (to *see as*). This last phase of the procedure represented a move from a more descriptive analysis to a more interpretative, summarizing, and theoretically informed analysis.

Findings

The three teachers taught in the new classroom and in the traditional classrooms in parallel throughout the project. Lecturing and students’ individual work or pair work were the main methods in the traditional classroom, whereas students’ collaborative group work was the overall dominant method in the new classroom. Seen over the study period, we identified three themes that reflected how the teaching in the new classroom developed and how the teachers’ transformative agency evolved over the course of the project. The three themes, as presented below, were “teaching almost as usual,” “teaching as breakdown,” and “teaching based on a collective meaning of students’ active learning.” In the presentation of the findings, we have replaced the teachers’ names with “Teacher 1, 2, and 3.”

Teaching Almost as Usual

We labeled the first theme “teaching almost as usual” because, despite the completely different classroom design and furnishings, the first lessons in the new classroom were designed and structured quite similarly to when the teachers taught in the ordinary classroom. This lack of change demonstrated the first sign of a conflict of motives (Engeström & Sannino, 2016) in the teachers’ efforts to change from the traditional teaching practice to students’ active learning. Typically, the lessons were based on three sequences—a short introduction based on a handout, a long working slot during which students were expected to work with one or maybe two assignments, and a brief teacher-led summing-up part at the end of the lesson. The big change compared to the

traditional classroom concerned the working slot. In the traditional classroom, the working slot often consisted of either individual work or a combination of individual work, pair work, and group activities, but in the new classroom it always consisted of collaborative group work. The students were organized into groups of 3–5 students at the round tables, and the teacher most often took a position near a wall to gain an overview of the classroom. The assignments differed between the subjects, but all students were given handouts of tasks to be accomplished during the lesson, and the way the tasks were designed indicated weak teacher control of sequence and pace. Examples of collaborative group work were literature seminars (in the subject Swedish), discussion and analysis of scientific articles (in STEM subjects), and web development assignments (in computer programming). Regarding the ALC space, the groups were urged to use the smartboard and one laptop and to collaborate, thus making sure all students in the group participated actively. In relation to the theoretical framework, the new classroom space with its round tables, whiteboards, and smartboards contained what Engeström and Sannino (2016) label as *second stimuli* because it was designed for, and urged, collaborative group work. However, the overall organization of the teaching, as described above, remained the same. The new classroom space (the stimulus) opened up for change, but teaching continued in much the same way as usual except for the fact that the working slot became less varied (collaborative group work only) and teacher control was weak in terms of sequencing and pacing the students' work.

Even though the teaching went on pretty much as usual, the teacher–researcher conversations from this period were an unusual feature of the everyday practice. The conversations became another type of *second stimulus* with the researchers bringing in new questions and perspectives on the observed practice. During this first period, the conversations were dominated by the issue of how to put the groups together. Because the classroom was designed exclusively for group work and because it was the dominant activity in the classroom, this topic occupied much of the teachers' thoughts. Group composition was discussed with regard to group differences, group size, rules of order, and group progress. The teachers believed that many students at the school and especially in some of the classes were not motivated to study and had difficulty taking responsibility for their studies, and thus also had difficulty taking responsibility and being active in group work. This also happened in the traditional classroom, but in the new classroom the notion of being active in the group became more obvious because the working slot was strongly dominated by collaborative work and possibilities for individual work were limited. Hence, the new classroom space made group issues visible for both teachers and researchers in a different way than in the traditional classroom because students were constrained to sitting and working in groups. Another effect of the new classroom space was a need for increased planning time. The teachers felt a need for a more detailed and careful planning of the group composition than they were used to when teaching in the traditional classroom, and they also felt a need to discuss group compositions with each other:

I don't know how you guys [directed towards the other two teachers] have done it when putting together groups, but we have discussed this a lot, and, well, in my last lesson there, I randomised the groups, but as you know, there are clear divisions between groups in this class, and that kind of hampered the group work in the classroom, because there are some students that cannot stand each other. (Teacher 3, Teacher-Researcher Conversation 1)

They planned the composition of groups in advance, but situations still came up that they had not foreseen. For example, some students did not attend class as expected, which forced the teachers to make changes in the group settings in the classroom, which they found difficult and made them feel like they were losing control and which were also seen as distracting for the students:

“You pick someone from some other group and throw him into another group where more people are needed... so [I struggle with] how much you should, like, break in and tamper with a lesson and with students' work that still, you know, kind of rolls on. [Teacher 2, Teacher-Researcher Conversation 1]

Furthermore, a need for guiding and supporting the student work in the groups had arisen, which was rather new to them. The students needed support in order to engage in and succeed with collaborative work for the long working slots, but the teachers found it challenging to support them. The teachers felt that they were interrupting the students' work when they communicated with them during the group work, something that one of the teachers expressed in terms of a feeling of “destroying.” We understand the increased discussions about group composition, and the teachers' struggles to make the collaboration between the students work as smoothly as possible, as one aspect of the core *conflict of motives*. The teachers discussed, developed, and experimented with different strategies to address this problem. One such strategy was to have the students take on different roles within the group, for example, the secretary role, the chair role, etc. Another strategy was to compose groups in different ways—sometimes peer-based groups, sometimes groups consisting of students who usually do not work together, sometimes groups with students who work fast/slow, and sometimes randomized groups. We understand the strategies they took on as *break-outs* because they helped the teachers to move forward and to focus on other issues related to their teaching practice. As they completed more lessons in the new classroom, they reported having achieved increased confidence in relation to composing groups and having become adapted to having students always working in groups, which became the norm and routine in the new classroom. However, as described above, despite the dominance of collaborative group work in the new classroom the overall principles for teaching did not change much. The teachers did not experience any significant changes in terms of students' engagement or active learning, which indicates that the main conflict of motives remained.

Teaching as Break-Down

The second theme, teaching as break-down, was closely connected to one particular lesson and one teacher, but it had significant effects on how the process developed for all three teachers. As described above, because the new classroom was designed for group work only, the teaching that took place there was always conducted in the form of students' group work. But the new classroom design in itself did not fundamentally change their teaching, and although the teachers over time developed strategies to compose groups and other ways of helping the students to collaborate better, the teachers started to express signs of frustration toward what they experienced as a "status quo" situation. This applied in particular to one of the teachers, who explicitly articulated that he wanted progress and more obvious change in the teaching practice and asked the researchers for concrete guidance. This was the situation when the teacher conducted a software development lesson that he experienced as a total failure, a break-down that in Engeström's theory indicates a break-out based on the development that occurred thereafter. After having introduced the assignment and having distributed a handout, the students started to work in groups. In accordance with the teacher's instructions, each student was given a professional role in the group as "programmer" (writing code), "designer" (graphical user interface), or "talent" (giving advice to the programmer and designer). From a distance (one researcher was present filming the lesson), the teaching situation looked as usual—the students collaborated sitting together around the table programming using one computer and one smartboard, and the teacher walked around and checked how their work was progressing, helping those who had problems. However, the students appeared uninterested and unfocused, and as the lesson proceeded most of the students kind of faded out and did not complete the task within the allotted time of about 60 min. The students lost interest and started to do other things, something the teacher explained as being related to the fact that some students lacked some of the basic knowledge needed to succeed with the assignment, something that came to the teacher's attention during the lesson. After the lesson, the teacher was self-critical and expressed frustration:

Teacher: I wonder what I could have done differently?

Researcher: Have you any ideas?

Teacher: No, I'm not sure. A much easier task so they can repeat what they for sure need to master.

Researcher: Decrease the level of difficulty?

Teacher: Yes, I think so. Starting from scratch again.

(Teacher 3, Informal conversation)

When analyzing the particular lesson together, the teachers and the researchers found that the students' lack of basic knowledge was not the cause of the situation that had arisen, nor was it the group composition. It was rather the lesson and the assignment itself, or more specifically, how both the sequence and pace were tacit and thereby not visible for the teacher or the students. During the discussion, the

teachers realized that during the long working slots the control of sequence and pace was left to the students, which did not happen to the same extent as in the traditional classroom where varying work methods were often used. We interpret this as a *conflict of motives*. During the long sequence of 60 min, the students successively accumulated mistakes and misunderstandings that were not picked up by the teacher and discussed collectively in the group. This issue was raised by the researchers in several teacher–researcher conversation and was discussed and problematized intensively among the teachers. On the one hand, the teachers felt that letting the students work on an assignment without any checkpoints to control how the work progressed was “bad teaching” and was not how things would be in the traditional classroom. On the other hand, they did not want to interrupt the students while they were working in groups:

“I’m a bit afraid to intervene. What you experience is that you have quite good control with regard to what is going on, their knowledge and lack of knowledge, and what they are doing. It is still difficult to make a break because it feels like you lose the momentum you built up and then it feels like it is better to provide smooth guidance in the right direction, instead of making a break where they shall show their understanding.” (Teacher 2, Teacher-Researcher Conversation 4)

With input from the researchers (second stimulus), the teachers directed their analyses toward their own instructions and structuring of the lessons. From this analysis, we understand that teachers’ control came more naturally from the practice in the ordinary classroom of switching from individual work to group work and back to individual work again. This variation was missing in the new classroom where the focus was solely on students’ collaborative group work based on the constraint of sitting in groups.

Teaching Based on a Collective Meaning of Students’ Active Learning

The indicated break-out and conflict of motives referred to above became a turning point that gave the project new momentum. The teachers started to discuss the teaching more in detail, and in doing so they realized that they lacked a shared language of practice—that they lacked a theoretical framework to talk about and analyze their teaching. The researchers introduced a framework based on six key concepts that characterize principals in teaching, namely the selection of content, sequence, pace, evaluation, and speech space in the teacher–student and student–student relationship (Bernstein, 2000). The introduced concepts, which we consider as more *second stimuli*, were presented as an analytical tool to discuss and analyze the lesson that failed, but also as a framework to discuss and analyze teaching in general in order to construct collective meaning of the new concept of students’ active learning. The conversations brought the main *conflict of motives* regarding teacher-centered teaching and students’ active learning into the light, and small but important steps were taken.

For up-coming lessons, the teachers decided in dialogue with the researchers to focus on sequence and pace, which were two of the concepts—in light of the failed lesson—that they found crucial for structuring lessons and for creating checkpoints for keeping students on track. Focusing on sequence and pace made sense to them when reflecting on how to keep students on track and engaged, but they also recognized the principles from the ALC methodology (Baepler et al., 2016). The framework supported the teacher's analyses of their teaching and became a tool for them when planning and changing practice, bringing the conflict of motives between the known practice of teacher-centered and the conflicting practice of the new classroom into reflection:

“In the ordinary classroom I can switch; first I talk a lot and then I let the students talk to each other. Here [in the new classroom] I pay more attention to students' active learning and [...] I think more on the concepts [...] especially on how I have planned the sequences and pace, will it work or not?” (Teacher 1, Teacher-Researcher Conversation 4)

Elaborating upon and trying out different variations of sequencing and pacing was seen as a means for keeping control over the lessons and for keeping the students on track. They came to the conclusion that a clearer and more active sequencing and pacing of the lessons had a positive outcome in practice, and they experienced that the students worked more intensively and concentrated when the lessons were appropriately sequenced and paced. In addition, it was observed how the teachers left their position by the wall and walked around among the groups. Furthermore, the checkpoints gave the teachers greater insight into the students' learning processes, but also gave students insights into each other's ways of solving problems because their work on the assignments was visible on the smartboards.

“I remember one such episode where they had solved problems differently. You know, [the students] reflection [was] “but they have accomplished it that way” and “our solution is okay, but there is room for improvement, and we can check how the others have done it.” (Teacher 3, Teacher-Researcher Conversation 5)

In our interpretation, the tool of a shared language of practice represented a new *second stimulus* that helped the teachers to elaborate on sequencing and pacing in new ways in the new classroom, which in turn represented several *break-outs* from the traditional way of teaching and a push toward a classroom practice characterized by students' active learning. The new structuring of lessons resulted in greater teacher control of the students' group work, but this helped the students to keep their concentration in the collaborative work and to concentrate on the assignments. Thus, paradoxically, the stronger teacher control led to more shared meaning-making and active learning among the students in this new classroom space. With the help of a shared language of practice, the teachers augmented their *transformative agency* and took collective steps toward a classroom practice characterized by students' active learning.

Discussion

The teachers' project started like many other school development projects, with an enthusiastic idea to transform practice through the designing and building of a new and innovative learning environment (Sigurðardóttir & Hjartarson, 2016; Tse et al., 2015). Few studies have previously reported on the use of ALC methodologies in upper secondary school, but studies from higher education have demonstrated the benefits of using ALC methodologies (Baepler et al., 2014, 2016; Brooks, 2011; Hyun et al., 2017; Lundahl et al., 2017; Whiteside et al., 2010). Thus, when the teachers initiated the development project, they had high expectations—they believed that the new classroom space would help them change their teaching. Indeed, the new classroom space affected their teaching because all activity in the classroom had to be carried out in the form of student group work. Also, the design of the room made the teaching practice visible to them and helped them elaborate on and develop their teaching. However, this required a great deal of joint reflection and analysis because group work does not automatically lead to engagement and active learning among students. Thus, changed preconditions regarding the physical environment were not enough to reach an active learning classroom practice. As our findings indicate, the process of transforming practice became complex, which usually is the case when constructing and implementing a new object and concept for an activity (cf. Engeström & Sanninos, 2010). Before the teachers initiated the development project, they had discussed and agreed on the *concept* of students' active learning, but they had to work out what that meant and how it was to be achieved in practice and in dialogue with each other.

The studied 6-month process demonstrated a process from “teaching almost as usual” to “teaching as breakdown” to “teaching based on collective meaning of students' active learning.” This was a process in which *stimuli* helped the teachers to bring forth and deal with *conflicts of motives* that led to *break-outs* from their ordinary teaching practice and thereby created *transformative agency* toward a new classroom practice. More specifically, the new classroom design, teachers' frustration with the status-quo, the use of a shared language for planning and organizing practice, and the teacher–researcher conversations all contributed to forming these teachers' transformative agency where incremental steps were taken toward students' active learning. This movement from “teaching almost as usual” to “teaching based on collective meaning of students' active learning” captures what we in this chapter consider to be a transition or “boundary-crossing” from the dominant classroom practice based on variations of individual work and group work and teacher-centered communication to the non-dominant practice of students' active learning (cf. Pettersson & Olofsson, 2015; Sannino, 2008) based on constraints of students' group work and new ways to communicate and moderate the sequence and pace in teachers' communication. The transition from the first theme to the third theme was thus enabled by the teachers' transformative agency. While in the first and second theme they did not take advantage of the dynamics offered by the new classroom—for example, they did not direct or control the students group work—they acted on and challenged this

“status quo” situation in the third theme by taking more control over the activities in the new classroom in order to stimulate the students’ active learning (cf. Lockton & Fargason, 2019). Further, we argue that the teachers became aware of the students learning in another form than in the traditional classroom. This was based on how they started to move around among the students and thereby gained information about students’ progress, while the students became more focused and did not accumulate misunderstandings as they did when they were asked to handle both the sequence and the pace of the lesson.

When considering the boundary-crossings illustrated by the transition from the second theme to the third theme, i.e., the movement from “teaching as breakdown” to “teaching based on a collective meaning of students’ active learning,” it became obvious that the mechanisms for students’ active learning referred not only to the second stimulus of the new physical classroom space, but also to another second stimulus that referred to a common ground for talking about and analyzing practice. This talking and analyzing was to a large extent concentrated on the structuring of lessons in terms of sequence and pace. The teachers realized that they tended to hand the responsibility for sequence and pace in the working slots in the new classroom over to the students, but, as has been demonstrated in previous research (e.g., Bernard et al., 2019), being in control—especially over pace—can be challenging for students. In the first and second theme, the pace was regulated by the teachers only to a limited extent, but in the third theme this changed—the teachers reclaimed the pace and sequence and made it more visual to the students through the use of clear starts and stops (Baepler et al., 2014). Thus, the conflict of motives that emerged from the second theme and the second stimulus of a shared language of practice shows how the teachers gained transformative agency (Engeström & Sannino, 2016).

All in all, this study illuminates a process of expansive and dynamic learning among the teachers. The teachers processed and analyzed their teaching in continuous communication with their colleagues and with the teacher team in teacher–researcher conversations, but it was not until they, with input from the researchers, came up with a shared language as an analytical tool and stimulus for their practice that they as a collective created and gained real transformative agency. The conflict of motives that emerged from the second theme in combination with the second stimulus in terms of a shared language of practice resulted in transformative agency (Engeström & Sannino, 2016).

This study illustrates the complexity of changing practice and how educational change involves both the physical learning space and the teaching practice. Previous assumptions and beliefs about students’ active learning have argued for a peripheral teacher role (Barr & Tagg, 1995) or a role as a guide on the side where students are assumed to handle both sequence and pace. This study indicates that the teacher has an important role in the monitoring of both sequence and pace in order to support students’ active learning. This study further illustrates that teachers might benefit from professional guidance when undergoing transformation processes and that a shared language of practice might augment their transformative agency.

Implications for Practice

Based on the findings from this project, we argue that teachers cannot solely rely on new material conditions and new classroom designs in making the shift from teacher-centered teaching in ordinary classrooms to students' active learning in the new classroom. Starting to teach in a classroom with new material conditions, like in a non-traditionally designed classroom that seeks to change the teaching practice, requires perseverance and collegial exchange of knowledge and experience. Furthermore, in non-traditional classroom spaces teachers need to develop new ways of controlling the classrooms activities.

Conclusion

In summary, the key findings from this study lead to an increased understanding of teachers' transformative agency as a radically new means to expand teachers' learning and to support students' active learning in both theory and in practice. This was accomplished by working with conflicts of motives that were rooted in the dominant tradition of teacher-centered teaching. These conflicts of motives became boundary-crossing actions into the non-dominant practice of students' active learning. Making boundary-crossings became an important action to form a collective understanding of the meaning of the new concept of students' active learning.

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