Monitoring activities: a possibility for classroom development

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Abstract

This study aims at discussing how students become collaborative agents in the teaching-learning process, as well as describing the results obtained from the implementation of a school intervention project which involved monitoring activities in the classroom. The monitoring activities consist of forming groups of three to four students, with a monitor, so they can perform the classroom tasks provided by the teachers. This study is based on Cultural Historical Activity Theory, and applies some central concepts of Vygotsky's work, such as the Zone of Proximal Development (ZPD). Such a concept is essential for understanding the emergence of collaborative agency. Methodologically, this study is based on the Critical Collaborative Research (CCR), which enables all stakeholders to participate actively in the development of activities. We draw our data from classroom recordings and from a questionnaire responded by the students. We analyze the data using conversational and interactional analysis. Our results suggest that when students are also co-authors of a school intervention process, they have a potential for developing collaborative agency, so they can apply the concepts and rules developed during the implementation phase of the research to other activities outside the initial research aim.

Keywords

Monitoring – Collaborative agency – Collaboration – Activity expansion.

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Atividades de monitoria: *uma possibilidade para o desenvolvimento da sala de aula*

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Resumo

O objetivo deste trabalho é discutir como os alunos se tornam agentes colaborativos do processo de ensino-aprendizagem, bem como apresentar os resultados obtidos a partir da implementação de um projeto de intervenção em contexto escolar envolvendo atividades de monitoria em sala de aula. As atividades de monitoria consistem em formar grupos de três a quatro alunos, com um monitor, para que eles possam realizar as tarefas de sala de aula propostas pelo professor. Este estudo está baseado na teoria da atividade sócio-histórico-cultural, trazendo conceitos centrais da obra de Vygotsky, como zona de desenvolvimento proximal (ZDP), sentidos e significados. Tais conceitos são fundamentais para o entendimento da emergência da agência colaborativa. Metodologicamente, este trabalho baseia-se na pesquisa crítico-colaborativa (PCCol), que possibilita que todos da comunidade escolar tenham participação ativa no desenvolvimento das atividades. Os dados utilizados foram extraídos de gravações de aulas e de um questionário respondido pelos alunos. Como forma de análise, utilizamos análise de conversação e de padrões discursivos. Os resultados obtidos sugerem que, ao serem coautores do projeto de intervenção, os alunos desenvolvem um maior potencial para a agência colaborativa, de forma a aplicar os conceitos e regras desenvolvidos durante a fase de implementação do projeto para outras atividades fora do contexto inicial da pesquisa.

Palavras-chave

Monitoria – Agência colaborativa – Colaboração – Expansão da atividade.

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One of the main issues that secondary education schools face in Brazil is knowledge unevenness among students. Although that unevenness is present since the first years of elementary education, such an issue becomes striking in the final years of secondary education (CUNHA JR., 2015). As a way of minimalizing knowledge unevenness and to improve students' engagement during classes, many researchers have tried to find different solutions for that and other problems faced in the daily classroom routine (CUNHA JR., 2016). However, teachers are the main responsible for the implementation and sustainability of the intervention projects. Thus, there is a work overload for them, and many times the intervention projects are left aside.

In order to soften the work overload for the teachers, we consider that there is the need to investigate students' role on the intervention projects proposed to schools. Considering students as agents in the school intervention process, we follow one stream proposed by Freire (2014a), which claims it is not possible to separate teaching from learning, since both teachers and students must act in the activities, so there could be a real collaboration between the stakeholders.

For doing so, we discuss in this article how students from the 1st year of secondary education of State School Cônego José Eugênio de Faria (from now on, SSCJEF), from a small town in the State of Minas Gerais, participated on the development of a project involving monitoring activities in classroom. The use of monitor students is suggested by The Brazilian National Guidelines for Education (in Portuguese – Parâmetros Curriculares Nacionais) (Brasil, 2000), although there is no reference on how that work should be done in practice. Considering that gap from the guidelines to practice, this paper aims at: a) discussing how students become collaborative agents from the use of monitoring activities, and b) to describe the implications of the monitoring activities in the school context.

The monitoring activities in classroom consist of placing monitor students with groups of two or three students during the activities proposed by the teachers. During the activities with monitoring, it is expected that monitors act critically, trying to stimulate their classmates to solve the given tasks without providing a direct answer, that is, collaborating with the other students, as suggested by Magalhães (1998). Working in groups, the students allow the teachers more time to help the students with more difficulties, as described by Parrilla (2004).

Another issue considered during the implementation phase of the monitoring project was the student training. Both monitor and non-monitor students participated on meetings with the researchers so they could construct collaboratively the rules for the monitoring activity, so the role of each participant could be clear for all of them. That process of student training was performed in three different moments of time, and is described in another publication of the author of this study (CUNHA JR., 2016).

Thus, collaboration has a central role for the monitoring activities proposed by the intervention project. According to Magalhães (2011), the language of the participants enables the creation of collaborative spaces, allowing critical reflection of a given activity. However, simply collaborating with the colleagues does not establish the success or failure of an intervention project: it is necessary that the participants become agents in the process of development of the activities. According to Freire (2014a), by becoming agents in the world, the students are able to reconstruct activities, and by understanding their roles on an activity they can pursuit a common shared object.

By working in a critical-collaborative way, students have the possibility of becoming collaborative agents. In that sense, it is important that, first, the subject becomes agent of an activity himself, but also, while being an agent he can count on the other's agency as well. Thus, in this study we use the concept of

collaborative agency, which will be explained in the following section in more depth.

All the activities developed during the monitoring project were based on the Cultural Historical Activity Theory – CHAT (ENGESTRÖM, 1987; VYGOTSKY, 2001), and methodologically on the Critical-Collaborative Research – CCR (MAGALHÃES, 1998). The use of CHAT and CCR give the participants the possibility to critically act and reflect on their activities during all phases of the intervention, in a way that by becoming subjects of the activity they also become co-authors of the design the research.

In this article we used data from monitoring activities of SSCJEF, from Mathematics and Geography classes, and a questionnaire responded by the students two years after the beginning of the monitoring activities as well. Although presenting distinct interactional patterns, it is possible for us to establish some relationship between the two curricular components in regard to the monitoring activities.

Zone of proximal development (ZPD) for collaborative agency

When considering a school intervention project, we should also consider students as subjects of transformation of the research context. According to Freire (2014b), there is no teaching-learning activity without students, therefore, students should be considered as subjects in all phases of the intervention. In order to become subjects, we need to provide the students opportunities for acting with responsibility and autonomy during the development of the activities. In the work with monitoring activities, the students are the main subjects of the monitoring activities, therefore their wills and concerns are considered for the success of the activities.

By working in groups with monitors, there is the possibility for the emergence of Zones of Proximal Development (ZPD), one

of the central concepts of Vygotsky (1934). In this study, we understand the ZPD as an imitation process, as described by van Oers (2012b). However, imitation is not only the mechanical act of reproducing a task, but the act of appropriating and reconstructing an activity with collaboration of others. This process is called imitation as it considers the reconstruction of activities, which are culturally pre-established, by observing other people.

For the monitoring activities the students imitate the teachers in their groups, in a way that the type of discourse used in every different curricular component is similar to the discourse of his respective teacher. However, the monitor student is still free to give his own version of the activity, making the adaptations he judges necessary. The same process occurs with the non--monitor students, who imitate the monitors, so in that process of imitating they can perform tasks they would not be able to perform by themselves. That interaction process occurs through the resolution of conflicts in the activity (ENGESTRÖM, 1987), which can lead to reconstruction of rules and possible transformations in the activity (ENGESTRÖM, 2012).

By performing the activities in a critical--collaborative environment, that is, with the potential for the emergence of ZPDs, the students potentially become agents of the activity. However, agency as it has been defined is not enough. It is important to go beyond definition of agency such as *the power individuals have to choose what happens next* (LINDGREN & McDANIEL, 2012). In addition, many authors have discussed how students become individual agents on the teaching-learning activities (GUTSTEIN, 2007; SHARMA, 2008; LINDGREN & McDANIEL, 2012). In that sense, the focus of such discussions on agency is on how individuals improve their own learning results or how one student becomes more engaged in an activity (REEVE & TSENG, 2011; BAHOU, 2012; GOODMAN & EREN, 2013), leaving aside the influence of one subject on the others and the results about the group as a whole.

As a way of expanding the discussions on agency, we propose in this article the concept of *collaborative agency*. According to Miettinen (2013), collaborative agency emerges when two or more people from different areas work together to solve a given problem they would not be able to solve by themselves, in order to create a new product or service. However, in this study the concept of collaborative agency goes beyond the concept proposed by Miettinen. We consider that when a subject develops collaborative agency he is able to find the solutions for a given problem, but is also able to transpose those solutions to other contexts, that is, collaborative agency goes beyond the initial context of the activity.

In order to transcend those initial aims established in the beginning of the activity and to apply them to other contexts, it is necessary that all subjects are engaged and collaborate with each-other, and also that they are able to involve other members of the community who were not involved directly in the intervention process. In that sense, besides having a united and active group, they develop the ability of convincing other subjects that a given activity is useful for the whole community.

Thus, we consider that it is not enough that only the monitor students of the groups become agents: it is necessary that all monitor and non-monitor students also develop agency, so the activity has a common shared object for everyone. By observing the monitor student and questioning his positioning, the non-monitor student makes the monitor to reflect upon his actions, and consequently both of them benefit from that process. When students collaborate with each other, they emphasize the construction of a process aiming at a product, differently of a cooperative process, in which everyone performs a distinct task only focusing on the final product. In this study, besides discussing the monitoring activities with other students, the students also discuss them with the teachers, so all the stakeholders of the activity can pursue collective solutions for the problems faced by them.

In addition, this study follows the perspective of Critical Collaborative Research – CCR (MAGALHÃES, 1998; LIBERALI, 2009), which aims at the transformation of a research context and the involvement of all the community in the activities. For the monitoring project, we first discussed the general objectives of the intervention project with the school management team. Secondly, the teachers who were interested in the project participated on training meetings with the reasearchers, and finaly, the students also had training meetings. However, CCR approach is not limited to the participants training: from the feedback provided by students to teachers, and from teachers to the management team, it is possible to reorganize the way the activities are conducted, so that all stakeholders have bennefits. Thus, there is no immposition of rules from researchers, neither from the management team, but a joint construction of the rules for an activity.

Research context

The monitoring project

The monitoring project was developed at SSCJEF, in Cachoeira de Minas, a small city in the State of Minas Gerais. It is the only secondary education school in the city and serves both students from the urban and rural areas. This fact creates a huge socio-cultural diversity among the students.

As described in the introduction of this article, that difference also triggers the unevenness of knowledge among students (CUNHA JR., 2015). In an attempt to minimize that unevenness of knowledge faced by the school, the school principal invited two researchers (the author of this study and another colleague) so we could develop a joint work to supply that demand. We proposed the development of a project involving monitoring activities, which would be implemented to 1st grade students. The implementation phase took

one-and-a-half year (it started in the middle of the school year), being the first six months for teacher training and the following year for student training and implementation of the pilot project.

The monitoring activities consist of selecting the monitor students who are more acquainted with a curricular component, so they can work with a group of students, the non-monitors, during the tasks proposed by the teachers. The monitor students vary from one curricular component to the other, so one student could be monitor in Portuguese Language and non-monitor in Mathematics. The setting of the groups could be changed either by the teacher or by the students themselves, when necessary.

After the monitors were chosen, they participated on six meetings with the researchers, which would be the basis for understanding the roles of the students during the implementation of the monitoring activities. Following that, the teachers started the work with monitoring activities in their classrooms. For that, it was necessary a reorganization of the classroom routine, both for teachers and students.

The first step for the monitoring activities is the previous preparation of the monitor students, that is, the monitors should know, or at least have an idea of the theme that would be worked in class beforehand. For that, the teachers communicate to the monitor students what will be worked in the following class, so the students have some time to prepare themselves for the class. That communication can be made during a class, with a note on the blackboard or as the teacher considers effective.

However, informing the students the content of the following class does not replace the explanation of the contents by the teacher. The teacher explains/introduces the new themes for all the students in the same way he would do without monitoring activities. It is important to highlight that the monitoring activities were used only during the classroom tasks, after the explanation of the topics by the teachers. Being aware of what will be discussed during the

classroom tasks enable the students to foresee of possible questioning that may emerge during teachers' explanations.

In the first months of the monitoring activities with the students, the classroom tasks they would use monitoring with the groups of students were scheduled beforehand by the teachers. This organization was necessary since the classroom organization needed to be changed, so the students could work in groups. The teachers would then introduce the theme of the class, and then use the monitor students during the tasks. There were cases in which the teachers had two following classes in the same day with the same class. This enabled the teachers to organize longer activities so they could work with the monitor students, taking better advantage of time.

In the scheduled day, the students organized the room in groups. For doing so, the students had around five minutes in the beginning and also five minutes by the end of the class, so the next teacher could receive the room in the way it was organized before. After the students organized the groups, the teacher would give instructions for the tasks and leave the monitors in charge of each group.

Every group of students was formed by one monitor and two or three non-monitor students. During the activities, the monitors were responsible for collaborating with his colleagues, that is, teachers would give students a task to be performed in class, and the monitor students were in charge of helping the non-monitor students in their groups. This work in the groups is constructed based on the ZPD (VYGOTSKY, 1988), that is, the non-monitor students start performing a task they could not perform by themselves with the collaboration of the monitors.

This classroom organization in groups with monitors enabled the teachers a bigger time to collaborate with the students with more difficulties. In this way, the help from the teacher would be asked when the monitor students could not collaborate with the colleagues. Thus,

instead of answering questions from 30 students, the teacher needed to attend to only eight monitors, who would collaborate directly with the other classmates. The work with monitors, besides making the process of answering questions faster, leaves the teacher with more freedom in the classroom, so he/she can check the work done by the students in the class.

Due to the time spent to organize and reorganize the classroom in the beginning of the project, the monitoring activities occurred in a frequency of one class with monitoring activities for every six classes of the teacher. That is, in the case of the Mathematics teacher, who had six weekly classes, she would have monitoring activities once a week; for the Geography teacher, who had only two classes a week, the monitoring activities would occur every three weeks.

However, that frequency did not obligate the teachers to use monitoring activities. The teacher was free to choose the best moment for the activities. For instance, as the Mathematics teacher had two consecutive classes in the same day, she could use the two classes with monitoring and stay two weeks without using it. It could also be the case that the teacher could work with monitoring twice a week. It is important, though, to highlight that those changes at schools need to be gradual, as described by Parrilla (2004), so changes do not cause problems to the school routine.

Participants

Six teachers from the school, who taught Portuguese as mother tongue, English as foreign language, Geography, Chemistry, Mathematics and Physics, as well as the students from two classes of first year of secondary education participated in the monitoring project. The classes were composed in average of 25 students, ranging from fifteen to eighteen years-old. From the fifty students, thirty-one acted as monitors. The monitor students could be monitor in one or more curricular

component. In addition, the researchers were also participants in the project.

Table 1 summarizes how students were distributed according to the number of curricular components they worked as monitors, and the number of students who were non-monitor. Table 2 shows the number of students who worked as monitors in each curricular component. It is interesting to remind that during the monitoring project there were changes of the students who acted as monitors: some left the position of monitors while others became monitors. That exchange was suggested mainly by the students, however, with the consensus of the teachers.

Table 1- Number of monitor and non-monitor students

Monitor in	Number of students
All 6 curricular components	7
5 curricular components	3
4 curricular components	7
3 curricular components	5
2 curricular components	3
1 curricular component	2
Total	31
Non-monitor	19

Source: research data

Table 1- Number of monitors by curricular component

Monitor in	Number of Monitors
Physics	16
Mathematics	20
Chemistry	21
Portuguese	15
English	16
Geography	17

Source: research data

Participation in the monitoring project was voluntary, and all participants were free to refuse participation or to leave the project at any time. The informed consent was given by the parents of the students for research

purposes. Although participants were free to leave, there were no cases of abandonment. In addition, the monitoring project was approved by the ethical committee of Pontifical Catholic University of São Paulo.

Data

In this article we rely on two data sources: audio-recorded classes and a questionnaire responded by students one and a half years after the project started, which will be presented below.

Audio-recorded classes. During the monitoring activities project we recorded classes from the six teachers previously mentioned. For recording the classes, we used one digital audio recorder in every group of students, so it would be possible to register all the discussions inside every group (there was, in average, 6 to 8 recorders in every class). Then, the recordings were transcribed for analysis. In this article we will focus in one class of Mathematics and one of Geography. The objective of audio-recording classes was to analyze how interactions inside the groups occurred during the activities with monitors.

Questionnaire. The questionnaire was developed by the researchers and administered to students one and a half years after the beginning of the monitoring activities. It consisted of five open questions and had as objective to analyze the results obtained by the students after using monitoring activities. In that questionnaire the students had the opportunity to show the advantages they obtained by using monitoring activities, as well as to highlight aspects that should be improved. Those answers were also used in order to reorganize the monitoring activities in the following semesters.

Results

The interaction process in Mathematics and Geography classes with monitoring activities

The interaction patterns of the students can be very different in every curricular component. The way those themes are discussed with the students has a direct impact on the way the monitor students act with their groups. For instance, the Mathematics classes present a more rigid content, so it is more difficult to the monitors to find other ways of explaining those contents to the non-monitors. For the Geography classes, the students are freer to discuss the themes, enabling the use of more previous knowledge to the discussions. According to Bakhtin (1952), some knowledge areas have a standard discourse, which makes them more difficult to be paraphrased by the students. Thus, the students tend to reproduce teacher's discourse during the monitoring activities.

In that discursive process, students imitate the teachers in their groups. Here we understand imitation as the process of reconstructing something, as described by van Oers (2012), which occurs by ZPD. Although the student imitates the teacher, he still has the possibility of adding his personal traits to the activity. Considering the Mathematics classes, students tend to use more verbs in the imperative, while in Geography classes their discourse is more flexible.

By imitating the teachers, the monitor students feel themselves as teachers of the non-monitors. It is interesting to highlight that the non-monitor students expect the monitor students to act like teachers, so they can collaborate immediately when they have doubts or questions during the activities. This immediate assistance from the monitors serves as a stimulus to the non-monitor students, avoiding them to become less interested in the topic discussed and to lose focus and interest for what is under discussion, raising their engagement in the activities (CUNHA JR., 2015).

Data from the transcriptions of the Mathematics class suggest that the monitor students followed the same discourse of the teacher. During the tasks with monitoring activities the monitor students tended to use verbs in the imperative form, which puts the monitor in a distant position from the non-

-monitor students. When a student said *Take note of the formula so you know it*, or *Stop being lazy, I do not like lazy people!*, according to Kerbrat-Orecchioni (2006), that distance can be demonstrated by the use of specific pronouns, like *I-we* or *you*. However, in some situations that the monitor was not able to collaborate with the other students, they include the non-monitors in their discourse, as in the following example: *it is wrong, let's change this*. Even though there is the discursive distancing, it seems more related to the difficulties in paraphrasing the mathematical discourse. Although the discourse of the monitors resembled a traditional model of teaching, the use of monitors during the Mathematics classes enabled a higher engagement of the students during the activities, as described by the students themselves in their answers to the questionnaire.

Differently, during the Geography classes there was a higher questioning from the non-monitor students during the activities, which suggests a higher autonomy level from the students. During the monitoring activities, the monitor students acted as mediators, so they could enable the creation of collaborative spaces, in the same way as proposed by Magalhães (1998). With a different discursive pattern, the monitors presented a discourse permeated by pronouns such as *we* and *our*, and tried to conduct the non-monitors to find the possible answers to the questions. However, as suggested by John-Steiner (2000) the collaborative organization is constructed under tensions, and the person who makes questions needs to be aware to what extent he should question the other, so that the one who answers to the questions does not feel himself diminished or inferior and quits the activity.

It is interesting to highlight that during the classes there was a movement of development from agency to collaborative agency among the students. The monitor students were the first responsible for acting and to feel themselves responsible in the group, as described by Ramiro in his answer to the questionnaire: *I need to make them to be interested in the curricular component, because you can explain 10 times, if he is not interested he does not learn anything!* This will of making the other interested for something goes in the same direction as proposed by Freire (2014a), who states that you first need to engage all the participants so you can really have transformations of a given setting. Besides, Ramiro showed the potential for the development of agency, as described by Lindgren and McDaniel (2012).

After the monitor students could solve the matter of how to make the other students interested, there was a movement towards collaborative agency in the groups. According to Tulio, who was another student, *before the monitoring activities, there were some students who would simply copy what others did. Then, the monitors started explaining the contents. Consequently, they [non-monitors] started doing the tasks with us, and did not copy anymore.* According to Estepa (2004), new school practices should focus on the rupture from the individualism culture, aiming at collaboration among subjects. From Tulio's quotation, we could observe a transition from individual agency, as described by previous literature, to collaborative agency, which is dependent on the participation of everyone in the group.

In that sense it is important to highlight to the students that the monitoring activities are joint activities. The monitor does not give any answer, but tries to lead the classmate to deepen his answers and to present an argument that supports his answers as well. Thus, the monitor student is the one who acts critically, enabling the questioning of answers, so they lead to knowledge expansion of the non--monitor students (CUNHA JR., 2015)

Transformations in the monitoring activities: students as collaborative agents

After some time using monitoring activities, students were getting used to the new classroom organization, so that the time

Educ. Pesqui., São Paulo, v. 43, n. 3, p. 681-694, jul./set., 2017.

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spent for organizing the groups, either in the beginning or in the end of the class, was reduced. That enabled the teachers to use monitoring activities with a higher frequency. As suggested by Penuel (2011), by participating in all stages of the development of an intervention, the participants feel themselves more responsible for the work, consequently being more engaged for the activities proposed by the intervention project.

As a result of this higher frequency, the students decided they would use monitoring activities even when the teacher had not requested. This can be seen as an example of the emergence of collaborative agency developed by the students. They transcended the organization proposed by the teacher and reorganized the activity so it could supply their needs. According to Vygotsky (2001), the students appropriated of the instrument, so they could use it for other situations different from the initial situation they were supposed to apply it. Thus, students did not depend on the teacher to schedule the monitoring activity: every task proposed by the teacher could be performed with monitoring groups.

The next step taken from the students was to expand the use of monitoring activities to other teachers of the school who did not work in the monitoring project. Therefore, instead of the six initial curricular components, students started working with the ten curricular components. This expansion process can be also explained by collaborative agency. That would not be effective in other curricular components if only a group of students decided to use monitoring activities. Then, students needed to find a consensus that using monitoring activities would be good for all of them. As a consequence, students, acting on their own, implemented the use of monitoring activities in classes they did not use them. For doing so, students applied the rules established by them during the training meetings to the new curricular components that were added to the initial intervention project.

As a result of that expansion of using monitoring activities to other curricular

components, the classroom organization was kept in the form of groups, and was only reorganized in lines when requested by the teachers. Thus, there was also a transformation of the physical space of the classroom. The traditional organization of the classroom in lines was kept only when there were individual exams. In all stages of the monitoring project, the changes were gradual and slow. According to Parrilla (2004), the transformations that occur gradually in the social and practical school structures enable that they do not cause big tension to the organizational structures of the schools. In addition, according to Freire (2014a), transformations happen only when students become agents.

Another issue raised by students was the greater engagement of the class. According to the monitors, non-monitor students were more active, and did not want simply to copy the answers from the colleagues. This was also noticed by the non-monitors themselves, who also agreed they were producing more in the classes, so they could even improve their final grades. With the monitoring activities, most non-monitor students presented a significant increase in the final average grades. According to Parrilla (2004), the immediate support for clarifying doubts is one of the most remarkable factors for a more efficient classroom, which was possible, in our case, due to the presence of monitor students.

With the greater engagement of the students, ordinary problems of the classroom, like chatting or doing other tasks, decreased drastically. The non-monitor students reported that the monitor students give them no time to think about other things, and also that the quality of classes improved significantly.

Conclusions

After a period of three years using monitoring activities in the classroom, the results obtained by students suggest that the implementation of such activities was successful

during the period of time considered in this study. There was a significant improvement in students' final grades, better engagement and an effective transformation of classroom routine. Those changes were possible due to the level of commitment of the participants, that is, all school community was involved during the implementation phase of the research, which goes in the same direction as suggested by Frere (2014a; 2014b), who emphasizes the importance of all stakeholders, in our case students, teachers and management team, for the conduction of an intervention project in school context.

The involvement of all the community also enabled the emergence of collaborative agency among the participants, so that new subjects were involved in the monitoring activities throughout the project duration, causing the expansion of the activities initially proposed and the involvement of all school community with the monitoring activities. When students realized the potential provided by monitoring activities, they collaboratively organized themselves so they could apply the concepts they learned to other curricular components. As described by Miettinen (2013), by acting collaboratively, students are able to reorganize and to envision new possibilities for the activities they have been performing. In other words, the collaborative agency first implies the individual agency of each student, which consequently triggers a collective desire of expanding the previously defined objects of the school community.

During the implementation phase, the researchers collaborated both with teachers and students, so they could work autonomously after the researchers left the school. Thus, the work with monitoring activities was continued by the teachers, so that every new school year the students who joined the first year of secondary education would have the same training on how to work with monitoring activities. However, the teachers themselves would be in charge of such a training. That was possible because the teachers implemented the monitoring activities

to the new students every year. This result is consistent to the ones pointed by Magalhães (1998), in which she proposes that through a collaborative implementation process and collaborative execution of the school projects involving all school community, results tend to be more significant than projects simply imposed to students.

In order to have an overview of the efficacy of the work with monitoring activities, the Mathematics teacher reported in one of the teacher training meetings: *they do not need me anymore! They are doing everything by themselves! What do I do now?* Naturally, students needed the teachers. However, the use of monitoring activities revealed how teachers were overloaded during classroom activities, and the use of monitor students can be a powerful tool for the daily routine in the classroom for improving teaching-learning process. The work performed by monitor students could be understood under Freire's (2014a) perspective, who argues that teachers are not the only ones who have knowledge, and that students can and should contribute to the teaching-learning process inside classroom. Consequently, using students' knowledge inside classroom provides the teachers more time to collaborate with students with more difficulties in a given themes.

In our context of monitoring activities, the use of CHAT (ENGESTRÖM, 1987) was essential for understanding how activities were organized and reorganized during the three years of work at SSCJEF. One of those examples of reorganization could be observed in the criteria used for choosing monitor students: in the beginning, only students with higher grades were chosen. However, that criterion would not benefit students with very low grades, since monitors with bigger knowledge would have no patience with very weak students. Thus, monitors with an intermediate grade average were also included so they could work with the students with lower grades. That environment with different levels of knowledge enabled

a higher participation of students, so that the emergence of ZPD, as described by Vygotsky (1988), could be observed from the transcripts of the recorded classes. In that sense, ZPD can be understood as a possibility of expanding knowledge construction for students and teachers.

Although the monitoring activities project was very successful, due to changes in the management team of the school and due to other management impositions from the State Government, it was necessary to diminish the frequency of the monitoring activities in the classrooms. However, the teachers who participated from the beginning of the project continued using monitoring activities with their students on a regular basis. It is important to highlight that the project of monitoring activities was implemented after an effort of the school management team on trying to solve unevenness of knowledge presented by the students, and not imposed by an institution or researcher. This emphasizes the social-historical characteristics of the participants, as described by the theoretical basis of CHAT (ENGESTRÖM, 1987; VYGOTSKY, 2001).

Despite being developed in only one secondary education school and that the results can be questioned by other researchers, transformations experienced by students and by the school as a whole can be explained by the collaborative aspects of the research, as described by Magalhães (1998). According to the author, the development of a research based on CCR enables the participants to reconstruct the activities in order to adapt them to their real needs. By collaborating in the organization of the activities, students feel themselves as co-authors or the research, and consequently they also feel more responsible for the development of the activities. However, developing a collaborative research, which gives voice and possibility of acting to students, may be the biggest challenge to researchers who intend to implement school intervention projects in a broader scale.

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