

Triggering sustainable professional agency: using change laboratory to tackle unequal access to educational success collectively

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agency

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Abstract

Purpose – This study aims to depict how a change laboratory (CL) promotes sustainable professional practice at the workplace to tackle unequal access to educational success.

Design/methodology/approach – The empirical findings are from a CL focusing on school professionals' agency and a follow-up study one year after the CL.

Findings – The study shows how the staff gained insight that professional agency is a collective and relational practice. Furthermore, the staff explored how to make a difference with viable means to create new workplace models for students' success despite experiencing a conundrum.

Research limitations/implications – This study examined participants' perspectives in workplace change and provided support for further research examining how professionally and collectively designed models gain sustainability in schools.

Practical implications – This study provides empirical data of how professional agency for change driven by collective visions can be accelerated with the interventionist method CL among school professionals.

Social implications – Professional groups in school, and the need to follow up to detect sustainable change.

Originality/value – This study emphasizes the value of professional collective learning at the workplace, driven by several professional groups in school, and the need to follow up to detect sustainable change.

Keywords Change laboratory, School professionals, Equality in education, Professional agency, Workplace learning, Competences, Engagement

Paper type Research paper

Introduction

Assessments of school results on national level consistently show that factors external to the school impact student achievement (Skolverket, 2009, 2012, 2019). Of these, and

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consistently across nations and time, parents' educational and socio-economic status stand out as the strongest predictors of school success (Coleman *et al.*, 1966; White, 1982; Sirin, 2005; Yang and Gustafsson, 2014). In addition, local conditions, especially young people's chances, or limited access to the labor market, have been found to impact students' educational motivation and achievement (Uljens *et al.*, 2016). Still, in the Swedish system, according to the Educational Act, such predictive parameters should be compensated for in school enhancing the role of equal opportunities and rights to learn in school (Swedish Education Act, 2010: 800, Chapter 1, Section 9). Therefore, the statistical pattern of inequality shown in the Swedish educational system is of concern. For that reason, the focus has been drawn to professional issues regarding school personnel on how to professionally work with compensatory practices in school and develop such competence at the workplace.

National and international research shows that local conditions are crucial for students' motivation and achievement in school, and teacher's qualities of subject didactic competence and classroom leadership are important (Hattie, 2009; Skolverket, 2009). Furthermore, teachers' attitudes are also emphasized as crucial for student success (Jussim and Harber, 2005). Therefore, professional agency becomes important both as individual capacities and collective actions among communities of in-service teachers (Yakisik *et al.*, 2019).

The current study has been formulated in cooperation between researchers and school administrators from a rural Swedish municipality, based on their concern that there is a large and growing gender gap in the results, and on a notion held by some principals and teachers that motivation for school is low for many students, especially low-achieving boys. The school administrators and teachers suggested that the problems result from an interplay between norms and conditions in the local community, fostering negative attitudes to education and unfavorable but amendable learning premises in many schools and classrooms. To change the situation, principals, teachers and other professionals, such as school nurses and union representatives, and researchers, have worked together to find ways to deal with the gap in grades between boys and girls. The theoretical and methodological framework decided upon was change laboratory (CL), which is a specific form of formative intervention where actionable knowledge is understood as a collaborative and generative possibility to create change intertwined with transformative action (Sannino and Engeström, 2017).

Aim and research question

The purpose of the study is to depict how a CL promotes sustainable professional practice at the workplace to tackle unequal access to educational success:

How can a change laboratory support the development of collective professional agency to support desired change?

Change laboratory as a formative intervention for professional agency

Change laboratories have been conducted in a range of school settings, such as in a vocational school (Teräs and Larsson, 2012) and for school developers (Ferreira Lemos and Engeström, 2018). In addition, several studies of school practice have been devoted explicitly to studies where CL has been used as a method to support the development of teachers' agency (Sannino, 2010; Englund and Price, 2018; Morselli and Sannino, 2021). Research shows various factors (both at an overall institutional level and between employees) that can affect a professional group's experience of owning agentic resources and actual opportunities to influence their work situation or problems related to it (Englund and Price, 2018).

Often, there is resistance to change. Still, the resistance itself can also have a built-in potential for change, as mentioned in Englund and Price's (2018) study. In addition, Sannino

(2010) has studied the relationship between resistance and agency among a group of high school teachers who participated in a CL where the problem revolved around assessing student learning. Resistance is seen as an expression of a will to conquer space for action and authority and thus becomes a force to be reckoned to implement change (Sannino, 2010).

Several studies emphasize a crucial factor in triggering agency: teachers are allowed to view, critically examine and discuss the problem (Sannino, 2010; Virkkunen *et al.*, 2012; Englund and Price, 2018; Morselli and Sannino, 2021). For example, Englund and Price (2018) show that transformative agency emerged when teachers were allowed to analyze, imagine and reshape their customary practice. The study thus emphasizes the importance of activities that support and facilitate discussions, analysis and critical review of the organization (Englund and Price, 2018).

Virkkunen *et al.* (2012), who studied how a CL in a senior secondary school supported the transformation of teachers' negative construction of students as objects for their teaching, also show how a small amount of relevant "mirror data" from the current practice in combination with analysis and discussion within the teacher group was sufficient to question current categorizations of students. However, to trigger transformative agency, it required a rich and varied empirical basis regarding the students that the teachers were given the opportunity to study and reflect on (Virkkunen *et al.*, 2012).

An important aspect of the participants' conquest of agency is developing new methods and tools to implement changes by their creation (Sannino, 2010; Virkkunen *et al.*, 2012; Englund and Price, 2018; Morselli and Sannino, 2021). Support in identifying and developing artifacts can be offered by confronting the participants in a CL, with the help of the interventionist, with a problem that affects them so strongly that they become ready to act. Furthermore, the triggering of agency is facilitated by professional support in the process (Sannino, 2010; Virkkunen *et al.*, 2012; Englund and Price, 2018; Morselli and Sannino, 2021) because formative interventions seek to support and accelerate expansive learning among participants (Engeström, 2020). In our study, aiming for the support of school professionals to tackle unequal access to educational success (Lémonie *et al.*, 2021), an interventionistic approach is used in the form of a CL.

Still, focusing on professional agency also involves separate professional phases because studies have shown differences between new and experienced teachers (Heikonen *et al.*, 2017). The variation of professional agency thus becomes an elusive phenomenon because of the identified impact professional agency has on student learning in school linked to relations (Edwards, 2005, 2007). Nevertheless, it becomes problematic to suggest model implementation to improve student learning while enhancing professional agency because professional agency refers to capacities to make decisions and take action to change, either to follow suggested changes or resist them (Toom *et al.*, 2015). Moreover, such model implementation has shown to be problematic, no matter the desired goals (Liebech-Lien, 2020). To support professional agency and organizational development, Engeström *et al.* (1996) suggest working with practitioners at the shop floor to use local capacities and understandings of local structures and processes to collectively create change at the workplace by model creation, emphasizing change as a learning process. Furthermore, to sustain change and evolve necessary practices to improve learning for every child in school, multiple role inclusion and dynamic processes become essential for sustainable change in local contexts (Taylor *et al.*, 2019).

Conducted change laboratory

A CL contains seven learning actions in the form of workshops, where participants meet around a "wicked" problem to try to solve it (Engeström *et al.*, 1996). Furthermore,

participants are expected to reflect on the process and try out tools and methods between sessions. Therefore, the CL process is not necessarily a cyclic process despite the presentation of the content of seven learning actions as such a process (Augustsson, 2021). Nevertheless, in this CL, as a theoretical tool to illustrate the process, a model of the CL process was introduced and explained in the first session, which the facilitator (role of CL workshop leader) returned regularly during the CL to visualize the participants where they are in the process and to seek consent among the participants if they agree upon the suggestion from the facilitator. This was important as the participants are the core owner of the process despite being guided in a process aiming for change, driven by professional creativity and critique.

Various mirror materials are also used during the sessions, consisting of facts related to unequal access to educational success manifested as a grade gap between boys and girls and quotes from the participants from the previous sessions. This material was supposed to work as triggers for reflection, discussion and analysis among the participants using their own words, local statistics or other historical, contextual, visual and therefore concrete material. Such mirror material can work as the Vygotskyian principle of double stimulation to trigger transformative agency (Engeström, 2007; Morselli and Sannino, 2021).

In the present study, nine sessions in the form of workshops were conducted. Each session lasted for 2 h and was held every Monday between 3:00 p.m. and 5:00 p.m. for nine weeks at the school in 2019. Typically, 25 out of 28 staff members participated in each session. The participants were all staff in a lower secondary school in Sweden, including the principal, recreation educator, school nurse and a union representative. Each session was videotaped following the established practice of documenting a CL (Engeström *et al.*, 1996).

Data analysis of sessions

The videos from the CL sessions were interpreted according to the seven learning actions (LA) of the CL process (see Table 1). The coding was driven by identifying when the participants verbally addressed specific learning actions during each session. The session's repository was constructed using quotes from participants and summaries of discussions during sessions. Each video was watched and coded with time identifications for each coded

Models developed and tested with students (eight models)

Explanation of the model

"Awareness-raising dialogue"	To interact with students and each other to enhance why things are done in a particular fashion
"Faster on the ball"	Be more attentive to students' progress and/or lack of progress, and act directly upon the information
"Collection model"	To have follow-up sessions after the school day for those in need
"123 relations"	To remind themselves to sit down a little longer with each student and not rush from one student to the next even if a student claims: "I am doing fine"
"Parental contact"	To inform parents in more detail about what goes on in school and why rather than provide information on what to bring and schedules
"Unikum"	Take the opportunity to use the Unikum LMS (learning management system) to communicate what and why things are done in school more specifically
"Student influence"	To listen to students' suggestions, ideas and dreams about what they want to do in school and understand their rationale for action
"Educationally crazy"	To be pedagogically bold and try out ideas that they felt could be daring and a little bit scary to try

Table 1.
Created and tested models

excerpt in the videos. The coding identifier for each excerpt is linked to the specific session and cell. The quotes can be found in the Excel repository. The repository contained time intervals of coded learning actions when each session was coded according to learning actions with a poignant excerpt.

After the repository was created, we calculated the total time for each coded learning action in each session. The rationale for this was to present the change of learning action on which the participants were spending time and energy during each session. The purpose was to identify when they focused on what and how that fueled the creative process of professional-driven change moving back and forth between the session permeated with collective theoretical analytical work during the Monday sessions and working with the students during the week in class. Each session thus got its pattern. It is important to know that this coding process does not aim for full coverage of all expressions in the CL. The coding process captured poignant sections in videos when participants were interpreted as clearly discussing content linked to defined learning actions. The idea here is to visualize the dynamics and the change that happened during the CL, emphasizing change driven by the professional collective.

To get an overview of the dominant pattern of learning action in each session, tables for sessions are presented as below (Figures 1 and 2).

During Session 1, the participants spent time to question (LA1) and analyze (LA2) the problematic situations. During Session 2, the participants continued to analyze the problematic situation. The visualizations of the coding process show that there was a move of discussions among the participants from questioning the problematic situation and suggested reasons for the grade gap that was the problematic situation under discussion to analyzing why they had such a grade gap between boys and girls in their school. Typically, the discussion concerning issues outside of school could explain the grade gap such as

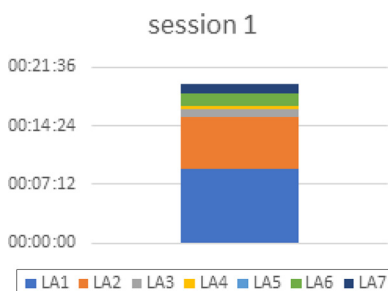


Figure 1.
Session 1

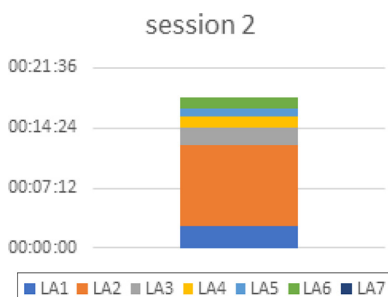


Figure 2.
Session 2

referring to parents' education, and sounded like this: *I also think that the parents' educational background must be considered. How do people talk about school at home? As a native X-inhabitant, you have met many parents who do not think that school is that important.* Dominating ideas about school performances from students were also discussed. For example, one of the teachers recited a comment heard from several boys: *We get better jobs and better pay after school even if we don't study. So why should we make an effort in school?* (Figures 3 and 4).

During Session 3, the participants started to question the problematic situation again in combination with doing analysis. Finally, during Session 4, the participants combined analytical work with modeling new solutions (LA3). During these sessions, the participants also started to orient their analytical eye toward themselves as professionals at a workplace, saying, for example, *To be a little provocative: Do we need to look at how we organize our teaching?* Moreover, they commented relative to the identified and problematic grade gap: *Do we place the same demands on girls and boys? Do we have the same expectations? Do we think the guys will do as well as the girls, or have we sentenced them in advance?* (Figures 5 and 6).

During Session 5, the participants continued to model novel solutions and refine tested models (LA4). The models were tested on and with students at the school. During Session 6, the participants worked with refining the tested models fueled by collegial discussions and experiences. At the same time, they focused on what they could do themselves: *The focus is on us. Finding the drive is finding motivation. If we have not done it before, we must change our ways now.* They also started to think about how to involve other parts in the local context to break the patterns of unequal access to educational success manifested as grade gaps between boys and girls: *I believe in increased cooperation with the rest of society in combination with the fact that we should also be more open and change our teaching methods. I do not think we will fix it ourselves.*

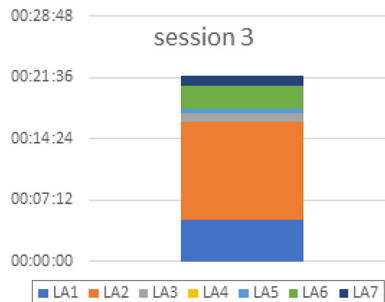


Figure 3.
Session 3

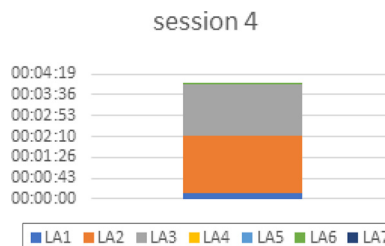


Figure 4.
Session 4

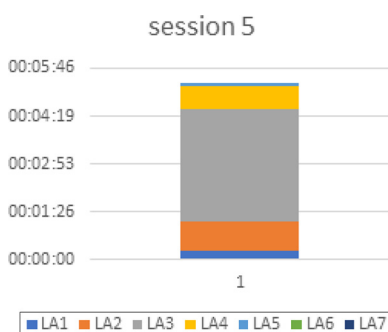


Figure 5. Session 5

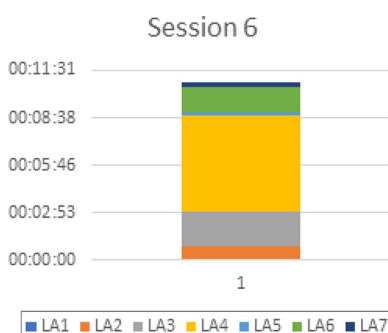


Figure 6. Session 6

One of the suggested models that focused on being more attentive to students’ progress or lack of progress and their silence about how they experienced being in school was a model they called “Faster on the ball.” This suggestion fueled model creation among the participants, and the participants suggested several models during the session.

During Session 7, the participants reflected on the models and the process (LA6). They evaluated their tested ideas and collectively decided to continue with “Faster on the ball” and “Awareness raising dialogue” (see Table 1). The other models did not stick with the whole staff but continued to be essential for some staff members (Figures 7 and 8).

During Session 8, the participants reflected on the process and discussion of how to generalize the new practice (LA7). Expressions such as “*This might be a start for us to open up and talk to each other, and it is very cool to see what happens when we do things together.*”

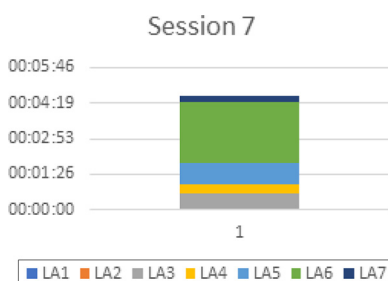


Figure 7. Session 7

What power!” was interpreted as a sign of the relevance, both of collaboration in the CL and being empowered by the experience of doing the CL process together with a focus on their work practices and professional development during the conducted CL at the workplace. Furthermore, typically, participants also emphasized the relevance of having this type of professional development process: *It is so important that we have a platform [referring to the CL sessions and practices] for discussing our profession because we look at each other differently after these weeks* (Figure 9).

The last session is coded in relation to a 10-min reflection session among the researchers because of camera failure during Session 9. The reflection session was recorded, transcribed and coded. The reflection session was coded in the same fashion as the videos. In the last session, the participants were also addressing reflections on the process and discussing how to generalize the new practice.

In sum, the development of the sessions followed the CL process in a quite regular fashion. The data analysis indicates that the CL process supported the participants in developing and driving their modeling and learning intricately connected to their organization and students tackling the social inequalities related to educational success. This movement becomes visually identifiable when looking at the sessions. Initially, the focus was on questioning and analysis. That pattern was present during Sessions 1–3. In Session 4, the move to start modeling became more apparent but analyzing the reasons for a grade gap was still present in this process of modeling the new. After trying out the models with the students, they decided what to continue with as a collective involving all professional roles in the school in the prioritization process, starting to reflect on the process. The reflection on the process was present in most of the sessions in the conducted CL but gained traction at the end of the CL process to focus on generalizing the new practice to tackle the unequal access to educational success in their school. After Session 9, the CL was

Figure 8.
Session 8

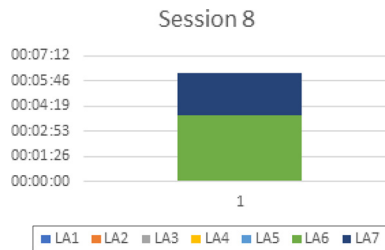
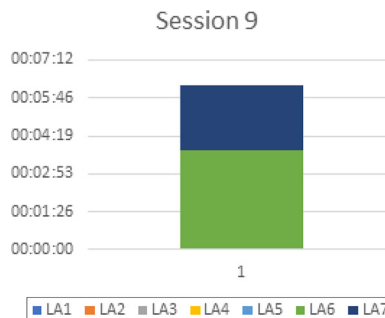


Figure 9.
Session 9



finished and agreed upon a follow-up study after one year to determine what kind of sustainable models and processes would be present at the workplace (Figure 10).

Data analysis of the follow-up session

The follow-up session took place in the autumn of 2020, a year after the final session of the CL in 2019. The follow-up session was carried out and videotaped following the previous CL sessions. In total, 26 participants were present in the follow-up session.

For analyzing the follow-up session, a thematic analysis was considered preferable for understanding the potential development of sustainable professional practice. The follow-up video was transcribed verbatim. The five steps of thematic analysis were applied to go beyond the surface of the data, creating a sense of scope and diversity in themes following Braun and Clarke (2006).

Analytical process

The first step in the thematic analysis was to become familiar with the dataset and assess the scope and sense of the framework. This initial interpretation resulted in several excerpts that were identified as significant. These interpretations were then systematically color-sorted and assorted to a timestamp. Finally, the interpretation served as the foundation of suggested themes which later were labeled in mutual agreement by the researchers (see Table 2).

The second step in the analytical process was focused on defining the initial themes (Table 3). The focus was to depict an initial sorting which ultimately resulted in six initial categories: *Awareness*, *Reflective work*, *Collective work practice*, *Question of responsibility*, *Community* and *Commitment*. These six categories were interpreted as the most prominent themes throughout the dataset by the researchers. These themes were color-sorted and iteratively matched with the initial interpretation.

As a third phase (Table 3), the transcripts and initial categories were compared and discussed within the researcher group to assess transparency and consensus (Skjott Linneberg and Korsgaard, 2019). Furthermore, the goal was to formalize the identification of patterns relative to sustainable professional practice. These patterns were significant challenges or opportunities depicted in the dataset and subordinated the six initial themes (Table 3). Within these patterns, statements could be included and excluded depending on the fit to each initial theme.

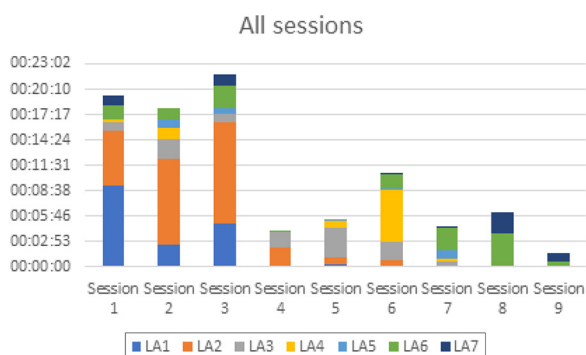


Figure 10. Summarization Session 1–9 combined with an overview of LA; LA1: questioning; LA2: analyzing; LA3: modeling the new; LA4: examining and testing; LA5: implementing; LA6: reflecting on the process; LA7: generalizing the new practice

Excerpt	Timestamp	Initial interpretation of the data	Initial themes
<i>I think, why do I do it this way? Well, because I want that little click or that person to be reached by this</i>	00:04:40	Increased awareness could lead to a positive work routine	Awareness
<i>This constellation [CL] how we would keep it because it was something that many appreciated so I did plan it in</i>	00:07:06	The group's reflection has become important in the colleague's daily work practice	Reflective work
<i>What has happened is that we talk more about teaching methods and how we can think together, and it has been fun. . .</i>	00:07:25	The group together creates the conditions for change	Reflective work
		The group's working methods have changed from focusing on the individual to the collective	Collective work practice

Table 2.
Exemplifying the thematic work of the follow-up session

Initial themes	Example of excerpts	Identification of patterns	Final themes
Awareness	<i>It is like once again that we think even more before we choose what we do, how we do it, and how it affects and how it is received and what it can do for difference for boys and girls</i>	Capabilities or abilities that “need” collective and individual engagement	Achieved collective engagement
Reflection	<i>What has happened is that we talk more about teaching methods and how we can think together, and it has been fun. . .</i>		
Collective work practice	<i>I have been on sick leave for a while and came back, and I notice a difference in the staff, what you are talking about and just sitting like this to raise questions in a new way. That is my experience</i>	Collective engagement Togetherness/Agency	Practicing a sense of agency
Question of responsibility	<i>What can I change? How can I think? How can I give information that boys too can benefit from? Then, I have thought about what I am like, as a person, and how I behave[. . .] we talk about it, and this year we have started to sit in on each other's class</i>	Reflects within the individual Manifested within the group	
Community	<i>We get in touch with each other faster now. I think that is good. . .</i>	Capabilities needed for a sense of collective agency	
Commitment	<i>I also think that in the staff it has become a little different, a little more open, to try small things, I tried this, it sounded good, I tried that, it sounded weird, so I do not want to try or so, so you get different ideas to try out</i>		

Table 3.
Overview of thematic analysis

The fourth phase of the analytical process was an iteration where the researchers familiarized themselves with the data by reading and re-reading the material to obtain a consensus (see Table 3). The fifth and final phase formalized the two final themes: *Achieved collective engagement* and *Practicing a sense of agency*. These themes illustrate the abilities developed and later sustained within the teachers' working group since the first session of the CL took place in 2019.

In sum, the thematic analysis of the follow-up session indicates that the professionals are experiencing a *sense of agency to tackle inequality* and have *achieved collective engagement*. The movement from the initial experienced stage voiced in Session 1 of the conducted CL to the experiences voiced in the follow-up study is depicted in Figure 11.

Discussion and conclusion

The school as an activity system is a dynamic system where both internal and external factors affect teachers' experience of agency. Research shows how external factors, such as friends (Coleman *et al.*, 1966), the labor market (Uljens, 2016) and parents' educational and socio-economic status (White, 1982; Sirin, 2005; Yang and Gustafsson, 2014) have a substantial impact on students' motivation and school success. These external factors have also been shown to influence the agency of school professionals (Virkkunen *et al.*, 2012; Englund and Price, 2018). Our study focuses on unequal access to educational success manifested as a grade gap between boys and girls. Despite yearly information about the problem, the grade differences were initially not seen as an acute problem. Most of the staff felt confident that everything would be all right for the students despite efforts, especially for the low-achieving boys. From the outset of the process, knowledge of a bright future and getting a job made the question of the grade gap be perceived as complex and even hopeless for many school professionals.

Several studies emphasize that as an essential factor in triggering agency, teachers are given the opportunity to view, critically examine and discuss the problem (Sannino, 2010; Virkkunen *et al.*, 2012; Englund and Price, 2018; Morselli and Sannino, 2021). During the process, we saw, similar to Virkkunen *et al.* (2012), a change in staff members' attitudes

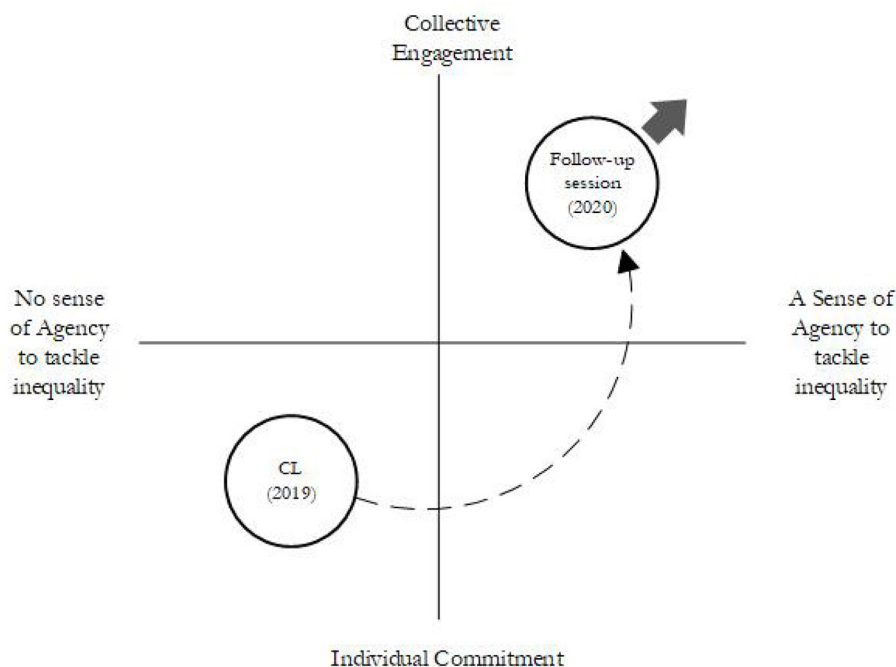


Figure 11. Process of change in agency to tackle unequal access to educational success

toward and categorizations of students. Like [Sannino \(2010\)](#) and [Englund and Price \(2018\)](#), we also identified that initial resistance changed during the CL to volitional action to tackle the problematic patterns of grade gap creating organizational development supporting such change. Crucial for this change was the collegial situation and interaction among the participants during the CL: overcoming initial resistance and discovering their collective capacities, abilities and professional power to drive change from the positions of professional agency combining their separate professional roles in school.

Furthermore, the theoretical tools and specific learning actions within a CL became crucial to trigger professional agency simultaneously. The collectively created models that were tried out with students were another vital stimulus for change and dynamic in the professional process of workplace learning and change. In this study, the theoretical principle of double stimulation is argued to be present in the collegial creation of a later collectively prioritized model to work inline within the school. However, the big challenge lies not only in the profession retaining its new models and concepts, as previously shown by [Ferreira Lemos and Engeström \(2018\)](#), but also in that they take over the process and drive workplace development forward within the framework of continued collegial learning.

The results from the follow-up study show that the participants in CL succeeded in developing a sustainable professional practice where they retained the agency to run their development work. Furthermore, the analysis of the obtained empirical evidence shows that they passed on the CL tools they worked with through CL in four ways: organizational, cognitive, strategies and professional support. These four ways are presented below:

Organizational: They took over the forms of CL through continuous meetings according to the same model as in CL (meet simultaneously, sit in a half-circle without a table, listen attentively to each other, talk one at a time). The model of monthly CL sessions for all staff was created because of the positive experiences of joint meetings. In these meetings, they could listen to all their colleagues to create a collective response and a collective culture of being together as a support team for themselves and their students rather than keeping the scattered group meetings organized around the specific professional role they had experienced before. They had performed monthly CL meetings during the year between Session 9 and the follow-up study and wanted to continue with this collective professional practice.

Cognitive: They have maintained using the cognitive tools they were challenged to apply during the CL process, such as ask more questions, critically review the models and work processes and reflect on their professional practice.

Strategies: They have continued with method development, and identified, developed and tried new tools and teaching strategies.

Professional support: They have introduced auscultation (“a colleague on my shoulder,” as they conceptualized it) as a method for developing their profession, not possible to do before because of not being comfortable with a colleague observing.

In conclusion, the school professionals have been welded together as a collective. They could see their own and their colleagues’ strengths and have found the drive to collectively work for change. However, despite positive professional development experiences, they also experienced hardship communicating to others outside of the workplace what they had created, obtained and learned as a collective. Therefore, it is crucial to continue to work with concept formation to understand complex processes and phenomena at the workplace increasing the analytical capacity and not only the professional practice. This calls for a continuous need for concept formation at the workplace to generalize the meaning of professional-driven change work in school. Thus, it becomes crucial to continuously fuel the process and enable others to learn from it. Furthermore, we suggest that inter-level analysis

(Morselli, 2021) becomes vital when addressing unequal access to educational success because of the widespread and growing problem in the Swedish school system.

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