When collaborative is not collaborative: Supporting student learning through self-surveillance

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1. Introduction

A plethora of research exists demonstrating the benefits of collaborative learning (Dekker, Elshout-Mohr, & Wood, 2006; Gabriele, 2007; Kramarski & Weiss, 2007; Pijls, Dekker, & van Hout-Wolters, 2007). Collaborative learning is a learning environment that requires students to collectively work towards a common academic goal. Collaborative learning enables students to develop the important life skills of working jointly with others on shared problems or challenges. Collaborative learning also provides an environment where students have the opportunity to share their expertise, to clarify and refine their own thinking through the process of sharing, and to also learn from one another (Duff, 2002; Gumperz & Hymes, 1986; Hardy, 2000; Nührenböger & Steinbring, 2009; Pimm, 1987; Saville-Troike, 2003; Sfard, 2000; Sierpinska, 1998; Stacey & Gooding, 1998). The existing research has resulted in numerous policy initiatives world-wide, emphasizing the benefits of students working and communicating with one another on common academic goals (Expert Panel on Student Success in Ontario, 2004; National Council of Mathematics Teachers/NCTM, 2000, 2006; Ontario Ministry of Education and Training/OMET, 2005).

Extensive research has also been undertaken documenting and analyzing characteristics of collaborative learning (Barnes & Todd, 1978; Cohen, 1994; Johnson & Johnson, 1994; Slavin, 1995; Vermette, 1998). Collaborative learning environments are those that: (1) allow all students to participate in meaningful ways, (2) generate opportunities for students to learn from one another in ways that enable individual students to move along in their own continuum of learning, (3) have individual accountability where knowledge and skills acquired will be necessary for future learning or will be assessed in some way, (4) include group-level academic accountability (i.e., assessment of common academic goal), (5) have social accountability in...
that individual students are concerned with other students’ individual learning, and (6) are centered around academic goals that require the collective efforts of all students (Barnes & Todd, 1978; Cohen, 1994; Johnson & Johnson, 1994; Slavin, 1995; Vermette, 1998).

Some debate exists on which elements are essential for collaborative learning. For example, Cohen (1984, 1994) asserts that the need for the collective efforts of all students are pivotal in order to achieve the common academic goal. In contrast, Johnson and Johnson (1989, 1992, 1994) argue that “positive interdependence” where students have a willingness to accept accountability for one another’s learning is indispensable. Lave and Wenger (1991) suggest that participation at the periphery of the group is sufficient at the onset of collaborative learning and a bare minimum for a student to be able to acquire knowledge and skills.

While the large body of research on collaborative learning (e.g., benefits and characteristics) is largely in agreement on the merits of collaborative learning, studies do exist that show that collaborative learning has negatively affected learning despite the social conditions within the group or the task (Sfard & Kieran, 2001; Sfard, Nesher, Streefland, Cobb, & Mason, 1998; Sinclair, 2005). For example, Sinclair (2005) describes how instances of incorrect information sharing, limited peer support, exclusion, and peer oppression, resulted in little learning from some children working in pairs in a computer lab setting. These studies illustrate that (a) collaborative learning may not be equally beneficial for all students, (b) educators need ways to identify when students are not benefiting from collaborative learning, and (c) there is a need to contemplate interventions that might be applied in a classroom setting when collaborative learning is unsuccessful for some students.

1.1. Research goals

In this paper, I share results from a year-long research project investigating collaborative learning in mathematics in an eighth grade classroom. Results from this research revealed that collaborative learning was often non-collaborative despite the pedagogical efforts and intentions of the teacher and despite the task. My goal in this paper is to illustrate and theorize about “self-surveillance,” an intervention that took place in this classroom.

1.2. Defining self-surveillance

Self-surveillance, as I use it in this research, describes a process in which students watched videotaped recordings of their collaborative learning with their group members and then reflected collectively on their practices. Self-surveillance was found to be helpful in facilitating alternative collaborative learning norms amongst groups of students who had been engaging in predominantly non-collaborative learning.

1.3. Defining collaborative learning

In keeping with the characteristics of collaborative learning described earlier, for the purpose of this research “collaborative learning” is defined as a learning environment that permits students to attain participation within the group so that individually and collectively students can achieve both common and individual academic goals. In contrast, “non-collaborative learning” is defined as learning environments where some students are prevented or limited in their ability to participate because of either social or academic factors. In the case of non-collaborative learning, the common academic goal(s) of the group may still be achieved, but not necessarily the individual academic goals by those students who were limited in their ability to participate. These students may achieve their individual goals; however the collaborative learning environment may have had little to do with the achievement.

1.4. Potential contributions from this research

This research makes a contribution to the existing scholarship about collaborative learning by (1) highlighting the reality that not all collaborative learning results in positive outcomes for all students, despite pedagogical effort and intention, and the task, and (2) demonstrating how the intervention of self-surveillance can potentially improve collaborative learning by disrupting normalized patterns, and thus facilitating alternative collaborative learning norms. Additionally, this research raises alternative theoretical perspectives on surveillance, which has been historically viewed as dystopic (Andrejevic, 2005; Foucault, 1977; Lyon, 1994; Vaz & Bruno, 2003; Yar, 2003). Although the content area in this research is mathematics, the results speak to a wider constituency about the potential for non-collaborative learning amongst students.

2. Theoretical framework

2.1. Dystopic and unidirectional view of surveillance

The concept of self-surveillance stems from the work of Foucault (1977). Foucault uses 18th century British philosopher and social reformer Jeremy Bentham’s proposed plan for a prison, called the Panopticon, as an architectural metaphor to theorize about surveillance and the power it exercises. Designed (though never built) by Bentham following the French Revolution, the Panopticon was a semi-circular structure built around an observation tower, intended to exert power and
discipline over prisoners through constant although uncertain surveillance; that is, prisoners were never sure if they were actually being watched. Thus, the “gaze” as conceived by Bentham was an asymmetrical power structure in that prisoners could be seen, but could not see.

Foucault (1977) theorized that the effects of surveillance result in normalization which he describes as a process that has a homogenizing effect and brings forth conformity. Normalization, according to Foucault, draws clear and binary distinction between “the permitted and the forbidden” (p. 183). The Panopticon, as an architectural metaphor for surveillance, demonstrates how the power of being watched (or perception of being watched) has the potential to generate normalized outcomes. The metaphor is used by Foucault to describe the ways in which power is exerted through control, discipline, surveillance, to make model citizens.

2.2. Surveillance as democratically controlled and social transparency

Foucault’s (1977) theorization about surveillance is predominantly dystopic and unidirectional. However, as he generalizes his theory of panoptic power (i.e., discipline, surveillance, power, and normalization), to society as a whole, he claims that the panoptic power “will be [my emphasis] democratically controlled” (p. 207). He says to this effect that panoptic power of surveillance will also enable “everyone to come and observe any of the observers” (p. 207). Indeed, contemporary society has already shown that individuals at all levels of society have the potential to engage in surveillance. Advances in technology and global communication and interactions have made the possibility of surveillance commonplace and relatively straightforward for many people (e.g., internet searches, cell phone cameras, personal recording devices, cameras in schools, airport surveillance, global security policies, environmental policies, security coded entrances, etc.).

Helpful in making sense of Foucault’s (1977) democratically controlled views of surveillance is Adler’s (1999) perspective on “transparency.” Adler proposes that transparency is the making explicit of discourse and pedagogical intentions to and for students. Transparency, according to Adler, forms the central mechanism for achieving full participation for students. Foucault’s theorization about surveillance being democratically controlled can be viewed as a move towards social transparency whereby social relations, power structures, and so forth, are made explicit by simultaneously making the observed observer of their own and other’s practices.

Much less attention has been paid to Foucault’s (1977) alternative conceptualizations of surveillance as democratically controlled where one can move from the observed to the observer. Appropriating Foucault’s theorization about surveillance as only dystopic and unidirectional can be limiting, particularly as the opportunities to engage in surveillance have expanded because of technology, global communication, and so forth. Recognizably, the term surveillance may elicit pejorative connotations for some individuals. However, as Yar (2003) says, considering only one view of Foucault’s perspectives on surveillance “excludes all other possibilities afforded to visuality in human experience, marginalizing the polyvalent meanings and complex dynamics that might be actualized” (p. 260).

In this research, students had the opportunity to engage in self-surveillance at various intervals during the research where they were able to watch their videotaped collaborative learning with their peers and interrogate theirs and others’ roles. Students became both the observers of their own and others’ behaviors. The gaze, in contrast to that conceived by Bentham, was distributed, thus the power of the gaze was also distributed throughout the group rather than asymmetrically situated as in the Panopticon. Vaz and Bruno (2003), also working from a Foucauldian framework, define one form of self-surveillance as “individuals’ attention to their actions and thoughts when constituting themselves as subjects of their conduct” (p. 273). Self-surveillance in this sense can be synonymous with self-regulation, self-control, or consciousness, whereby the individual becomes self-regulating based upon perceptions of what matters (i.e., health, addiction, finances, etc.). I elaborate on Vaz and Bruno’s definition of self-surveillance to situate students collectively, in addition to individually, as subjects of their own surveillance.

Exploring surveillance from the alternative and non-dystopic theoretical perspective proposed by Foucault (1977) and Vaz and Bruno (2003), to individuals collectively as both the observers and the observed and democratically controlled may have the potential to (a) (re) distribute power amongst students and to (b) generate alternative norms for collaborative learning.

3. Methods

3.1. Participants and setting

Data were collected over the course of one school year in an eighth grade classroom. The classroom was in a large urban setting in a region known to have a proportionally higher concentration of families of high socio-economic status. There were 34 students in total, 19 boys and 15 girls, all of whom were either 13 or 14 years of age. The teacher, Mark, had 10 years of experience.

3.2. Data sources

Data sources included: 38 h of audio- and videotaped collaborative learning sessions which were transcribed; audio- and videotaped focus group sessions which were also transcribed; audio taped and transcribed student interviews; student
journals. All the audio- and videotaping, as well as the interviews and focus group sessions were done by me. During the videotaping, I did not interact with students, take questions, and so forth. The students were clear that my role was to supervise the research equipment and the data collection and not them. Transcriptions of the audio tapes were done by an external agency and then compared to the videotaped data by myself to ensure accuracy.

3.3. Collaborative learning context

Collaborative learning that spanned over two or more double periods of mathematics (i.e., more than 140 min) were videotaped. The tasks included open-ended problems in geometry as well as financial mathematics involving the management of a stock market portfolio (see Table 1). Assessment in each of the tasks involved whole group as well as individual accountability. Students were pre-assigned by the teacher to small heterogeneous groups. The small groups were organized such that there was a mix of students with respect to ability, gender, and first language (Curcio & Artzt, 1998). The teacher randomly selected three groups for videotaping.

Mark, the classroom teacher, used many pedagogical strategies to prepare his students to work together collaboratively. He worked with the students in a whole group, as well as small group settings to develop appropriate strategies for collaborative learning. Mark was observed using following pedagogical strategies: (1) brainstorming around strategies for collaborative learning, (2) role-playing of how to work in groups, (3) group member role assignment (e.g., ‘accountant,’ ‘constructor,’ ‘stock advisor,’ ‘quality assurance person,’ etc.), (4) small group reports on working together, and (5) constant discussion about the need to communicate, share ideas, and work collaboratively.

As the groups worked together, Mark would rotate through the groups, again reminding students about various aspects of group collaboration that had been discussed in class. Groups were also asked to document during collaborations observations about their collaborative learning, which were then shared with the whole class at the conclusion of each task.

Mark also attended closely to the nature of the tasks assigned. Each task included in this research fit accordingly to those characteristics outlined in the research that suggest optimal conditions for collaborations (Cohen, 1984, 1994; Johnson & Johnson, 1989, 1992, 1994). These characteristics included: (1) tasks that require collaborations amongst peers rather than those that can be individually completed, (2) tasks that are cognitively appropriate for the group, and (3) tasks that have individual as well as collective accountability.

3.4. Data analysis

I viewed the video data immediately following the completion of each task, while awaiting transcriptions. Thus, each video was viewed in its entirety by me at least twice. My preliminary viewing of the video data from the research revealed that, despite the pedagogical efforts and intentions of the teacher to develop strategies for collaborative learning with the students, and despite the task, predominantly non-collaborative learning occurred. Some students seemed to be obviously excluded from the discussions and the activities of the group. The non-collaborative learning was unnoticed by the classroom teacher or me while I attended to the data collection and equipment in the room. Indeed, the students presented an “illusion of collaboration” that was beyond the teacher’s sight lines (Kotsopoulos, 2008).

Students were given the opportunity to view videotapes of their collaborations jointly with other group members. I describe this process (i.e., videotaping, followed by participants viewing of videos, followed by discussion, and then more videotaping) elsewhere as video study methodology (Kotsopoulos, 2007). The viewing sessions were also audio- and videotaped, and then transcribed.

The classroom teacher, Mark, did not view the videotapes or receive any information about emergent results for the duration of the students’ time in the class (i.e., until after the students had officially graduated). Students were told this at the onset of the research. This assured the students that the only observer on the other side of the video camera (i.e., me) was an individual who held no power over their academic outcomes in the class; thus, there would be no risk of implications to their academic outcomes as a result of their participation in the research.

At the conclusion of each task, students were asked to complete journal responses regarding their experiences in the group and viewing collaborations, following the collaborative viewing of the videos. Individual interviews with the students took place at the end of the school year.

### Table 1
Tasks used in class.

<table>
<thead>
<tr>
<th>Task</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open box-top problem</td>
<td>Construct an open-box top out of a sheet of 20 cm by 30 cm by removing perfect squares(^a) from each corner. Determine the dimensions of the box that would hold the largest volume and to conjecture what might be the dimensions of an open box that would optimize the volume given any size of paper.</td>
</tr>
<tr>
<td>Battling the bull’s eye</td>
<td>Design packaging for a new ‘energy’ drink with a total volume of no more than 250 ml. The packaging must be designed such that when the product is placed for sale on a store’s shelf, a large surface area would be visible to consumers in order to create a more significant visual draw of the product.</td>
</tr>
<tr>
<td>Stock market</td>
<td>You and your group are given $100,000 to invest. Each week you will buy and trade stocks and mutual funds with the goal of earning the most money possible to grow your stock portfolio.</td>
</tr>
</tbody>
</table>

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\(^a\) Perfect squares means squares with side-lengths of whole numbers (i.e., 1 cm \(\times\) 1 cm square, or 2 cm \(\times\) 2 cm square).
3.5. Reporting of results

This research is qualitative. The results (a) describe the ways the groups functioned and the structure of the groups (Section 4.1), (b) show that students did internalize the teachers’ pedagogical intention regarding peer collaboration through data from whole class discussions (Section 4.2), and (c) show students’ observations about viewing themselves on video through self-surveillance (Section 4.3).

Pseudonyms are used throughout this paper to protect the identity of the participants. My intent is to show the disruption of non-collaborative learning norms through the intervention of self-surveillance and to discuss and reflect upon the new collaborative learning norms that emerged. Some transcription data is presented to illustrate the findings that were consisted throughout the qualitative analysis of this year-long research.

4. Results

4.1. Function and structure of small groups during (non-)collaborative learning

Despite the pedagogical intention and efforts of the teacher outlined earlier, and despite the task, each of the groups videotaped functioned in remarkably similar and consistent ways. There were two primary roles that group members undertook, the foreman and the laborer (Kotsopoulos, 2007).

The foreman in the group directed the progress of the group. In some cases this student did engage in the task, whereas in other cases the student did so in very limited ways. This student largely gave directive orders to students, with the goal as stated by a student, “to keep us on task.” The foreman of the group did not perform any quality assurance mechanisms (i.e., checking answers, checking for understanding, etc.) and provided minimal, if any, assistance to peers who struggled.

The laborer often did most, if not all, of the calculations, constructions, and so forth, largely independently of one another, and shared results when asked, and if asked. Some laborers were rarely engaged in discussion and essentially excluded. Some even remained silent for the duration of every collaborative session they were involved in.

There was routine hostility between students, but most obviously towards those laborers (i.e., students) perceived as “not getting it” or holding back the group’s progress. It is very important to note, that these students were never seen as engaging in off-task behavior – despite the perceptions of their peers as not working towards the groups’ collective goal.

The roles of the foreman and the laborer are exemplified in this transcript excerpt from one of the groups working on a task related to the stock market (see Table 1). The foreman in this group was Ella. The other three students in this group, Aggie, Kevin, and Tomas were the laborers.

Ella’s communication with the group members was primarily in the form of orders (i.e., assigning tasks such as checking the progress of a stock, recording the data, tabulating columns, etc.). The group began by checking how their stocks did in terms of increases or decreases in values. In order to do this, the value of the stock was checked in the business section of the local newspaper.

Ella started the group off by handing a newspaper to Aggie. She asked this of Aggie and the others:

Ella: Aggie, call out the numbers. Everyone write them down.

As Aggie, called out the numbers, Ella glanced over at Kevin’s paper and noticed that he is not following along. She questioned Kevin’s lack of progress:

Ella: What? Are you still on that part?

Kevin: Tomas has my sheet.

In this particular session, Tomas has rejoined the group after being away during the previous session. Ella made more orders, this time of Tomas exclusively:

Ella: Next time you are away come to see us before.

Ella: Somebody has to give him our binder and make him catch up before the class.

Aggie: If he comes late . . . It’s his responsibility to get it done, cause [sic] he is dragging us down.

After approximately 3 min, Ella checked again to see if Kevin was done:

Ella: Are you caught up yet? [Makes three gagging sorts of sounds – “eh, eh, eh”]

Recognizing that it was likely Tomas who was holding up Kevin’s progress, Aggie asked Tomas, who was seated across the rectangular table from the other three students about his progress:

Aggie: Where you at?

Tomas: I am still working on the last weeks.

Aggie: Last week’s!!!

Tomas: I wasn’t here last week.
Aggie: Yeah, but where are you? Copy some down.
Ella: [Groans]
Ella: Just let him copy your sheet or something [Rolls her eyes]
Tomas: I got messed up .
Aggie: [Passes him the sheet and turns her back – Ella rolls her eyes]
Ella: When he is done, we have to check his.
Kevin: Tomas, are you almost done?
Tomas: Not quite.
Ella: Tomas, where are you?
Tomas: I'm finished.
Ella: Do you want me to check your numbers?

Ella did not wait to hear if Tomas wanted her to check his numbers, rather, she just reached across the table and took his book from in front of him. She looked over the numbers and sees that the numbers matched hers and responded with “Okay.”

After the new stocks were selected, the group needed to calculate the cost of the purchase and total their net worth. This was done independently by each group member.

Ella calls out the numbers that should be on everyone’s sheets, according to her calculations. Tomas expressed that his numbers were different. Ella again, reached over and took his sheet:

Ella: Okay, all of this is wrong.

Aggie joins Ella in the checking over of Tomas’s work:

Aggie: No, that’s wrong. The last one is wrong, so …
Ella: He copied it down in a different order. Some of the numbers were wrong.
Ella: Well, we repeated it.

At the conclusion of this session, Ella said this:

Ella: Somebody has to put the desks back. You, you [pointing to Tomas] have to put the desks back.

As seen in the previous transcript, students were not observed helping one another understand the mathematics in any of the collaborative learning observed. Discourse between students was largely directive (i.e., giving of orders such as “add this”).

As seen in Tomas’s group, students compared answers orally or visually with one another. Some students reported that an answer was deemed trustworthy depending on who the person was reporting the results. However, in addition to trust, accuracy was determined via a democratic process. An answer was deemed correct if the majority of the students had the same answer.

Tomas showed significant insight about his experiences during collaborative learning in his interview:

Tomas: So, like after we started at the beginning and I was sick one of the days. I didn’t have the numbers for that week and so the group sort of assumed that I was not understanding [sic] it. Although they didn’t really try to help, and so like after I borrowed Kevin’s folder and got the numbers. It was just all clear.

Like, I could do everything. It was just I was sick … so that really put me off them. So I didn’t have the numbers. And so like if you have a look at the tests, the test will tell you I understood.

He was well aware of his physical exclusion:

Tomas: Well … not that far, but like at the other end and the group’s sort of over here and I’m over here like that, and they’re all working together and I was sort of left out.

I asked him if he felt he could participate, or in other words if everyone’s opinions were heard:

Tomas: Yea, just some people choose to keep their voice inside of them. Probably because like the leader in the group would … sort of do all the stuff and then tell the others how to do it. They would tell them the answer.

Even though non-collaborative learning was occurring for Tomas, he still reported that he was able to be academically successful in this mathematics unit in spite of his circumstances.

Although Tomas was successful and did do as well as most of the members of his group, his group members continued to identify Tomas as problematic within the group work:

Tomas – he was the one who dragged us down. He would always be catching up on the work he missed because he wasn’t there. And instead of actually trying to do it, he would copy all the time, therefore he would copy the day’s work too because he was copying. He wouldn’t always get the right answer. (Aggie, Journal response)
Ella also made similar comments:

I found that Tomas wasn’t [sic] there all the time for stock market and he never asked one of us [sic] for our books, so he
could copy it down, instead he waited until actual stock market day and it put our whole group behind. So while he
was trying to catch up from last week, we would be copying down all of our stocks we had. I guess that probably made
it even harder for him to catch up, but we didn’t want to get too far behind. At the end of each stock market day we
would all check each other’s [sic] work and whenever we check his most of the numbers was wrong so we would have
to help him fix it. (Ella, Journal response).

Kevin, the strongest mathematics student in the group who also talked very little, summed up the group succinctly during his
interview:

Kevin: I did not think that our group worked very well as a group. We were lucky that we had some strong math
students in our group or we may have struggled. When I saw the video I was not surprised. There was
very little talk in our group. Tomas missed a couple weeks. This slowed our group down a little. I did not like
how the other group members treated Tomas when he needed to catch up. No one in our group helped
anyone else. Everyone had to calculate
the numbers by themselves.

Kevin’s comments validated much of my observations about the ways in which groups functioned. In particular, his
comments validated the observations made with respect to Tomas’s role within this group.

Tomas was never seen off-task during his group work or not working. He was continuously calculating and writing.
Tomas, although ultimately successful in his learning according to him, cannot attribute that success to factors related to
collaborations within the group since he was predominantly excluded.

4.2. Students’ internalization of teacher’s pedagogical effort and intention

Some of the observations reported by students during whole class discussions with the teacher about working
collaboratively were: (1) “we checked each other’s work,” (2) “we helped those who didn’t not understand,” (3) “we were all
equal partners,” (4) “we were pretty much not goofing around at all,” (5) “we listened to everyone’s ideas,” and (6) “we
discussed our findings to see if they made sense.” Groups, nevertheless, reported that they “could have worked better in
communicating.”

My initial observations of the video data stood in stark contrast to what the students reported doing, and as was shown in
the previous transcript excerpts from Tomas’s group. I did not observe instances where student were helping one another. I
did not observe instances where students checked each other’s work. I did observe students comparing answers, where
accuracy by democracy prevailed. I did not observe all students included in the collaborations. I did observe significant off-
task behavior, but not by those that appeared to be excluded or marginalized.

To examine the contradiction between what I had observed and what was reported by the students, I conducted a focus
group session with the whole class. The teacher was not present. I opened this session by explaining to the students my
alternative observations of what occurred in the group settings in contrast to what was relayed in their whole class
discussions with their teacher at the summation of their most recent collaborative learning task.

The first question I asked the group was about the degree of off-task behavior. Earlier the groups reported that there was,
to their surprise, little off-task behavior. In the focus group session, one student, Kelly said, “I personally think that that we
got off track a lot,” which prompted chuckling throughout the room and nods of agreement from her peers.

I also asked students about checking over their own and each other’s work. Kelly again, said, “We kind of did. We kind of
trusted each other [that] they [sic] got the right answers. We were using our calculators.” I queried this further, and Kelly
added, “We didn’t really do it. We just checked it with the calculator, what was on the screen and what was written.”
Students in the focus group reported that they just wrote down the answer as they were orally dictated by a student and
determined correctness by who the student was (i.e., perceived to be a good mathematics student, foreman).

Where students had inconsistencies between results, these inconsistencies were often attributed to calculator errors –
either with the entry into the calculators or the calculators themselves not performing the calculations correctly.
Nevertheless, students conceded to accuracy based upon democratic principles – if the majority had the same answer, then
that answer must be correct. The accuracy by democracy approach was consistent throughout all of the collaborative
learning videotaped. Little critical appraisal of the answers, the associated thinking, and so forth, was observed.

In their whole class discussion, students made statements about helping one another. I questioned this and asked them to
discuss the ways in which they helped each other. Henry had this to say about helping one another:

Henry: We didn’t do that ever, but people didn’t ask so maybe they just didn’t want to do it.

There was also consensus within the focus group about not helping each other during collaborative learning. Furthermore,
there were widespread perceptions of struggling students not wanting to “do it,” as Henry stated. Another student, Rowena,
said this with respect to helping particularly those that appeared to struggle:
Rowena: I didn’t feel I needed to. Like some people didn’t ask or make it seem they needed help. They just didn’t want to do it so... [Comment trails off].

I asked students to think about how their own classroom teacher supports those who do not understand. Rowena felt that help from the teacher was only forth coming “if you have tried it.” I did observe this informally, outside of my in-class observations while waiting for class to begin during “before school mathematics help.” Students would be told that they needed to try the mathematics before help was extended, despite the fact that the students’ goal for coming to class early was to get assistance with their lack of understanding. Therefore, the student’s views are somewhat understandable.

My perception from the videos was that when a group member did not understand, the mathematics was simply done for them and provided, largely through oral dictation. I asked the group about this; there was a widespread mumbling of “yeah” alongside nods of agreement. Although I did not observe any significant questioning of the mathematics processes explored within the context of the videos during the first task, some students felt that there were indeed instances where sense making was questioned. For example, Ella\(^1\) had this to say in contrast to what I had perceived:

\(\text{Ella:} \text{ There were a few times when it didn’t make sense} \ldots [?] \text{ piece of paper} \ldots [?] \text{ had the biggest volume, was actually wrong because it had more actual material than the other one and it didn’t make sense.} \)

Rowena commented that in her group no one individual took on the foreman role, which resulted in the group not finishing the required task. All groups during the whole-group discussion talked about equal roles within the group, yet Rowena cited the lack of leadership as problematic. Rowena is observed through the majority of the 3–70 min videos of her group as engaging in off-task behavior. She explains her lack of participation as a result of not being told what to do within the group by a group member. The videos of Rowena’s group showed evidence of leadership, or a foreman. Jobe, a capable mathematics student, according to classroom test results, made many attempts to move group members forward with limited success.

One student, Alice, explained this disparity between what was viewed and what was said to the teacher during the whole group discussion:

\(\text{Alice: We give him what he wants to hear, the right kinds of answers. We’d look stupid if we said we didn’t care about anyone else but getting it done and getting it right.} \)

The reporting by the groups in the whole class discussion about their collaborative learning shows that they are able to parrot back to the teacher what is expected from them. Therefore, students appear to understand and internalize the teacher’s pedagogy effort and intention (i.e., how one ought to work in groups to ensure that all students have opportunities to learn) and yet functioned differently, nevertheless, and despite the surveillance of the camera.

4.3. Engaging in self-surveillance

Students viewed the videos from their groups together. I noted that students initially chuckled when they first viewed themselves on the screen and were somewhat amused. As the video progressed, students were visibly silenced. Some students became defensive and suggested that their behavior was “random.”

Students commented on the profundness of the experience of engaging in self-surveillance and how it changed their thinking, both about themselves and about others. The foremen in the groups were surprised at the videos as though their behavior was completely subconscious. Other students, mostly those that were predominantly silenced during the collaborative learning, talked about not being surprised by the videos.

Tomas, as shown in the transcript excerpt, was largely excluded by his peers throughout the collaborations. The foreman in his group Ella had this to say following the viewing of the videos:

\(\text{The video we watched also showed me that maybe the girls were kind of hard on Tomas for not being with us all the time, but then again if u [sic] are having trouble I think u [sic] should tell your group members and we would have helped him. I think our group learned a lot from this and I realized you need to check with everyone to make sure they are with the group every so often, involve them, ask them [sic] questions, etc. [sic] (Ella, Journal response)}\)

Ella seemed to recognize that the group excluded Tomas but at the same time, blamed Tomas for his predicament. The students’ comments emphasized that students do not perceive themselves as responsible for other’s learning. They do not attend to each other’s learning, which is seen as an expectation of a teacher and not of themselves despite dialogue to the contrary during and in preparation for collaborative learning.

Kevin, the other male in Tomas’s group, expressed concern over Tomas’s treatment and was not surprised by what he viewed. Tomas was also not surprised by what he viewed. He seemed to have perceived the group’s challenges in working together, and seemed to have been aware of his treatment by his peers.

Holly was another student who was also largely excluded from her group’s collaborative learning. Kelly, the foreman in her group, also commented on the usefulness of the video in highlighting the ways in which she functioned in the group and

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\(^1\) Ella here is describing a different task than the one highlighted with Tomas. She was still the foreman in this task as well (see Table 1 for the task).
in particular the way in which she treated Holly. In this excerpt Kelly commented on her role, changes she saw in her group, and changes in herself:

Watching that video made me see that I should think about what I’m going to say before I say it because half of that stuff I said I didn’t even realize what I was saying and it sounded really mean... If I could take back all that stuff I said I would definitely take it back and I regret everything I said... Also our last session was really good, in my opinion, like we all worked together really well and it wasn’t just because we had that discussion and saw the video, at least for me it wasn’t. I realized on my own that I was being kind of mean to Holly and tried to be nicer and more patient with her.

Kelly and her group made learning virtually inaccessible for Holly. Kelly, in her interview, insisted that she was not aware of her behavior prior to the viewing of the video:

Kelly: I felt really bad after because I didn’t realize I was saying that because you don’t really realize what you say until you see it.

Kelly contends that “seeing it” made it obvious. The exclusion was not apparent to either me or the classroom teacher even though we were both present in the classroom, although not directly attending to Kelly and Holly’s group.

Ali, perhaps the most capable mathematics student in Holly and Kelly’s group was not surprised at the videos. Counter to Kelly’s perceptions, Ali did find the group’s dynamics obvious:

I wasn’t surprised at all when I saw the video because the same kind of thing happened during the other sessions. The more I worked in this group the less I said because I realized it was better just to do the work then start interacting with my group then trying to get everyone on the same page I am doing the same work. I know that’s not what being in a group is but I felt that Kelly sort of had people follow. (Ali, Interview)

Ali felt silenced in the collaborative learning, largely because of the dominance of certain voices within his group.

Holly had this to say about watching the videos of her group: “I was glad we watched the video so they could see what they were doing.” Holly said that the video alerted the others, and most particularly Kelly, to their treatment of her during collaborative learning. Holly reported that she felt “more comfortable” working in her group following the viewing of the videos, which fit with what Kelly had said in the earlier quote, and what was observed in the subsequent videos.

Observable changes occurred in the ways in which the groups interacted following the students’ viewing of their groups working together on video. Particularly obvious was Holly’s group. In the video following the viewing, Kelly is seated directly beside Holly. Kelly began this session by saying:

Kelly: You guys, we’re going to go through this slowly. We’re just going to copy this down and we are not going to go any further until everyone is at the same spot. Holly, Holly, quickly!

Holly in this video seemed more relaxed and more connected, chatting (although inaudible), and laughing unlike the discomfort evident in the earlier videos. Kelly continued to move her group along in her foreman capacity, this time in a more inclusive way:

Kelly: We are not picking yet.
Ellen: I’m done!!!!
Kelly: We don’t want to exclude anyone. Holly, keep writing.

Kelly checked everyone’s work but in particular continued to glance at Holly’s worksheet. She gave directives and intermittently asked if Holly understood.

Each earlier encounter Holly had with members of her group evidenced hostility. For example, when Holly calculated the incorrect answer others would groan, roll their eyes, and even turn sideways to look in a direction away from Holly. Kelly routinely made grunting sounds when Holly spoke. Holly reported feeling more comfortable in her group following the viewing of the videos and she thought this was directly related to the increased awareness by other group members of her previous treatment.

Similar observations in terms of changes in the ways group members interacted with one another were also seen in Tomas’s group whose transcripts were highlighted earlier. Following the viewing of the videos, Tomas was routinely asked if he had the correct number and if he was keeping up with the rest of the group:

Ella: Tomas, do you have any numbers written down yet?
Tomas: Yeah.
Aggie: Are you almost done, Tomas?
Tomas: Yeah, I just need the last one.
Ella: Okay, ready? Did you get it?
Tomas: Yeah.
Ella: Do you understand how you got that?
Students were observed as being concerned about where Tomas was in relation to others in his group and about his understanding, which was particularly novel in comparison to the earlier videos.

4.4. Results summary

In summary, the non-collaborative learning sent a message of incompetence and exclusion to Tomas and Holly, and other students in similar positions. The teacher’s pedagogical effort and intention proved inconsequential as did the video camera recording their collaborative learning and the task. The only observable changes occurred when students had the opportunity to view themselves on video and talk about their interactions.

5. Discussion

Prior to the self-surveillance, the presence of the research camera did not coerce students into working collaboratively together. I attribute this to the fact that the students were clear at the onset of this research that only I and not their classroom teacher would have access to the videos or the information within the videos until after the students had completed their academic year in this class. Consequently, there was no chance of repercussion for their actions.

This assertion that the camera was of little significance in the absence of the self-surveillance is supported through the research findings reported earlier. The students' reports to the teacher about their collaborative learning differed and were far from what was evident in the videos. The focus group sessions showed they had internalized how they ought to be working together, yet did so differently nevertheless – the presence of the camera was of no apparent consequence.

Students like Tomas and Holly received little support from their peers during collaborative learning. Moreover, efforts by these students to collaborate were thwarted by one or more members of the group. The group served to sustain a particular normalized way of collaborating that was exclusionary.

Notable change occurred in the ways in which the group members approached each other following the self-surveillance. This research demonstrates instances where all parties involved, the observer and observed, agreed that student interactions were non-collaborative. Self-surveillance allowed the excluded and marginalized students to interrogate and question each others' participation within their groups. These students were permitted through the process of self-surveillance to gain access to the power of knowing and being known.

Self-surveillance generated new normalized ways of collaborating while at the same time generating a way of interrogating each other within the group. The power within the group was distributed rather than isolated to one or two students who perceived themselves to be beyond the gaze, and the gaze ceased to be unidirectional (Andrejevic, 2005; Foucault, 1977; Lyon, 1994; Vaz & Bruno, 2003).

It is important to note that the extents to which new collaborative learning norms following self-surveillance are sustained are unknown. New collaborative learning norms may only be superficially adopted by students. Additionally, in the absence of self-surveillance, the new collaborative norms may be abandoned.

As Yar (2003) argues, Foucault's (1977) view of dystopic view of surveillance, may over estimate and over value the role of visibility in moving uncritically superficial adherence and conformity of behavior to internalized values and beliefs. For example, to return to the architectural metaphor of the Panopticon, a prisoner may abide by the rules because they are being watched. This in no way suggests that the prisoner is reformed or will behave accordingly or be law abiding when not being watched. The prisoner's abidance may only be a facade, one which may fall away easily given the opportunity to escape the perceived gaze. Individuals must also internalize the intended social circumstances such that conformity results in more than superficially developed norms.

Social transparency of group collaborations is necessary in order to make possible a collective social consciousness, where all students are valued and where there is concern for other’s learning (Johnson & Johnson, 1989, 1994). The video data, as well as the interviews, suggests that efforts did ensue with, for example, Tomas's peers to include him in the collaborations. Students need to become aware of their actions – but also, and equally important, is that these students need to be aware that others are also aware of their actions. Social transparency also becomes a starting point of emancipation for those that are most at-risk of exclusion and may enable access and opportunities for participation (Adler, 1999).

Interestingly, Lyon (1994) suggested that growing interest, during the later part of the 20th century, on the relationship between architecture (i.e., the Panopticon), surveillance and power, emerged out of an increased awareness and commitment globally to social rights. Given this outgrowth, alternative conceptualizations of Foucault’s (1977) surveillance, as a mechanism of distributed social rights in peer learning, is appropriate. Self-surveillance affords participants social transparency while simultaneously building on individual social rights in a collective setting.

6. Conclusions

Schools are public places of learning that ought to ensure safe and accessible learning for all students. Consequently, pedagogical strategies should work towards neutralizing the effects of power relations that restrict some learners. Self-surveillance potentially works towards this goal by providing an opportunity for students to interrogate theirs and others' participation and thus occasioning potentially alternative collaborative learning norms.
Self-surveillance has the potential to disrupt non-collaborative learning by allowing students to question their roles in others' learning. Indeed, self-surveillance was seen to have a positive effect on collaborative learning. Self-surveillance, as shown in this research, could prove to be a pivotal tool in facilitating a shift in ethos amongst students. It fixes the collective behavior so that individual behaviors might be further interrogated. This research suggests that learning may be less about pedagogical models (i.e., teaching about how to work with one another), but more about social transparency (Adler, 1999). This being said, the extent to which change is authentic is difficult to assess and beyond the scope of the current research.

This research demonstrates that human interaction is at the core of learning, rather than teacher pedagogy or even the task. A close examination of collaborative learning by students, through self-surveillance, may be an important way of occasioning new normative opportunities for collaborative learning for all students than simply a select few.

6.1. Directions for future research

The extent to which alternative norms are sustained as a result of self-surveillance are an important area for future research. Additionally, research is also needed to explore why some students over others are excluded or become foremen or laborers during collaborative learning.

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References


