Novelties in the use of social networks by leading teachers in their classes

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ABSTRACT

We report on a study on the ways leading teachers in secondary schools use social networks while interacting with their students. We undertook in-depth interviews with five leading teachers, and analyzed logs of interactions in order to identify teaching practices combining social networks. One teacher considerably strengthened her traditional teaching practices to control students according to a pedagogical approach of *transmission of knowledge*. We found that four teachers fostered *social learning, autonomy* and *active engagement* among their students. They thereby fostered the constitution of a learning community — of inquiry, or a moral community, through the use of social network sites. Additionally, we identified the distinctive role of social networks in contributing to the students' *learning to be* part of their community.

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1. Introduction

Social network sites (SNSs) were created for establishing social links among people who share interests or activities. Such virtual platforms allow users to create profiles, and to establish or maintain connections with 'friends' primarily through text-based communication. Facebook is a well-known social network site that has become part and parcel of our students' everyday life. It involves not only student-student interactions, but also student-teacher communication: A substantial percentage of teenagers report that they are 'friends' with at least one of their teachers in many Western countries (e.g., Geocartography Knowledge Group, 2011). This new reality has given rise to ethical, pedagogical and social concerns. These concerns, together with media-covered cases of potential sexual misconduct, have led countries such as Australia, Germany, and several states in the USA to issue restrictions on teacher-student communication through any social network site, and to allow student-teacher contact only through separate, professional profiles.

In spite of these restrictions, teacher-student communication through social network sites (SNSs) is now very common, and has led researchers to wonder on its repercussions in pedagogy (Greenhow, Robelia & Hughes, 2009), psychology (Madge, Meek, Wellens, & Hooley, 2009) and ethics (Anderson, Rourke, Garrison, & Archer, 2001). While some argue that the use of social network site technologies fit socio-constructivist views of learning (Greenhow et al., 2009), some have reported on a negative relation between time spent on SNSs and college grades (Kirschner & Karpinski, 2010). Correlational studies, such as the latter study, however, are not sensitive to the plethora of activities that can be done with social network sites. Indeed, Junco (2012) found that the frequency of engaging in some Facebook activities was predictive (negatively or positively) of

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both final grades earned in courses (GPA), and time spent preparing for class. He found that posting status updates and chatting on Facebook chat were negatively predictive of GPA, while checking to see what friends are up to and sharing links were positively predictive. A number of studies have shown a strong positive correlation between levels of engagement in online discussions and grade results (Palmer, Holt, & Bray, 2008 in the context of an engineering management course, and Bliuc, Ellis, Goodyear, & Piggott, 2010 in the context of a political science subject).

Reviews on the use of SNSs as learning environments leave the reader confused. For example, in a review paper, Aydin (2012) concluded that the use of FB in educational contexts improves classroom practices and students' engagement. Furthermore, Aydin reported that Facebook increases learners' self-efficacy, motivation, self-esteem, positively changes perceptions and attitudes, reduces anxiety, and improves foreign and second language learning skills in reading and writing. In contrast, in another review, Manca and Ranieri (2013) noticed that some studies show that FB supports discussion and community building, while others do not show any particular benefit. Many of the studies cited in the above reviews are correlational. Other studies rely on students' self-reports, rather than on actual interactions (e.g., Roblyer, McDaniel, Webb, Herman, & Witty, 2010; Teclehaimanot & Hickman, 2011). Moreover, so far, empirical investigations have focused on college and university settings (DeSchryver, Mishra, Koehler, & Francis, 2009; Wang, Woo, Choon, Yang, & Liu, 2012). There is then an urgent need for empirical research on *actual* SNSs interactions between secondary school teachers and students.

1.1. Theoretical framework for analyzing SNS-based pedagogies

We sought a suitable framework for the study of the role of teachers committed to progressive pedagogies in courses that integrate the use of SNS tools. A priori, there was a natural ready-for-use choice: It was the framework that arose from Asterhan and Rosenberg's (2015) analysis in an empirical study in which they precisely investigated teachers' perceptions of student-teacher FB interactions and how (if at all) and why secondary teachers try to harness FB for pedagogical purposes. They conducted a survey with 179 teachers, 11 of whom they also interviewed, to find that many teachers use Facebook as a tool for establishing and maintaining contact with their students in a variety of ways and for a variety of purposes. Three main categories emerged from their study: *Academic-instructional, psycho-pedagogical* and *social-relational* purposes. We expand briefly on these categories.

The *academic-instructional* purpose consists of attempts to expand existing instructional practices and making them more efficient. Asterhan and Rosenberg (2015) found that secondary school teachers share and distribute learning materials through FB, orchestrate at home study during after school hours, establish private communication channels for one-on-one tutoring and help-seeking, and off-load organizational coordination tasks to FB, thus freeing up face-to-face classroom instruction time. Interestingly, however, most teachers reported that they do not fully exploit FB for designing progressive learning activities, such as collaborative inquiry and academic peer discussion.

The *psychological-pedagogical* motive consists of taking responsibility for securing student well-being. Asterhan and Rosenberg found that for many adolescents, FB has become the new town square (see also Lenhart, Purcell, Smith, & Zickuhr, 2010; Valkenburg & Peter, 2007). This status confers to FB a preventive function according to which teachers patrol the digital sphere to prevent unwanted, negative social phenomena, such as bullying or engaging in hate-talk. Moreover, some teachers use FB specifically as a tool for detecting psychosocial distress and to intervene when necessary. Improving social relations between teachers and students is generally not considered as a goal in itself, although it helps improving teaching and learning effectiveness. Asterhan and Rosenberg (2015) found that teachers report that FB turns the improvement of social relations to a purpose and that it helps them developing a *social-relational purpose* as they reported developing more personal relations.

The survey and the interviews revealed a less positive side to the use SNSs, though: teachers used SNS for novel instructional, psychological and social purposes, but these changes did not lead to innovative forms of online learning, in the sense that their pedagogies remained teacher-centered, without capitalizing on the collaborative affordances of FB. These results echo an interesting insight that Manca and Ranieri (2013) reached in a review paper on SNSs: "most of the learning experiences reported in the papers try to reproduce existing educational settings and established tradition of online and distance education". The starting point of the present study was the fact that, in the interviews undertaken in Asterhan and Rosenberg's (2015) study, the teachers reported on the activities of some well-known "champion" teachers that promoted alleged radical changes in their pedagogy. In our use of the term "champions" we refer to the definition given by Eyal and Yosef-Hassidim (2012), as "… committed to innovation and dedicated to fostering and promoting innovation in an organization by going beyond job requirements" (p. 216). Interestingly, the interviewed teachers referred to these champion teachers as models for their teaching, although they did not use these models in their actual teaching yet. We interviewed five such champion teachers and observed actual interactions between them and their students.

The activities of the champion teachers referred to in Asterhan and Rosenberg's (2015) study could not be analyzed according to the framework they developed, because these practices were characterized by detailed actions governed by pedagogies. A different framework was necessary. A priori, a good candidate was a theoretical model elaborated by Anderson et al. (2001) in *online courses* for assessing the teacher's presence or roles. This model classified teacher roles as *design and organization, direct instruction, and facilitating discourse*. The role of *design and organization* resembles the *academic-instructional* purpose Asterhan and Rosenberg (2015) identified. The role of *direct instruction* consists of communicating content knowledge by "interjecting comments, referring students to information resources, and organizing activities that allow the students to construct the content in their own minds and personal contexts" (Anderson et al., 2001, p. 9). A priori,

the third role — *facilitating discourse,* seemed to fit our goal to identify teachers' SNS-based pedagogies as it involves teachers in establishing and maintaining the discourse towards the creation of what Anderson et al. call a 'knowledge-building community'. As they state, in this facilitation, "the teacher supports and encourages participation by modeling appropriate behaviors, commenting upon and encouraging student responses, drawing in the less active participations, and curtailing the effusive comments of those who tend to dominate the virtual space" (Anderson et al., 2001, p. 7). However, the facilitation of discourse is usually integrated within direct instruction and in situ design of instructional activity. Teacher postings stimulate social process with a direct goal of stimulating individual and group learning. In on-line courses, the teacher is often simply present with all other participants — and the presence that Anderson et al. claim exists, does not necessarily imply something deeper than the fact that the ensemble of participants interacts.

The categorizations proposed by Asterhan and Rosenberg (2015) and the model elaborated by Anderson et al. (2001) are then a good basis to highlight that the reported activities of the champion teachers using SNSs may be beyond what generally happens in on-line courses, and is fundamentally different to the way most teachers act when using SNSs in schools. The key missing element from these existing frameworks was a focus on the formation of a learning community. This communal aspect has been the focus of intensive research in the *Learning Sciences* for more than 20 years; for example, Hakkarainen (2010) has reviewed different approaches to learning communities in the classroom. For Hakkarainen, the development of the community depends on engaging students in (a) pursuit of complex problems, (b) sharing and creating of knowledge, (c) breaking boundaries between educational and other communities, and (d) promoting the development of students' agencies (Hakkarainen, 2010). The approach among those reviewed by Hakkarainen that best fits the description of the activities of champion teachers who used SNSs to promote their pedagogy is Scardamalia and Bereiter's (1994) Knowledge Building (KB) Community. KB relies on technologies such as Knowledge Forum so that the sharing and creating of knowledge involves material artifacts. This sharing and creation can promote collective responsibility for pursuing knowledge objectives: Zhang, Scardamalia, Reeve, and Messina (2009) assessed whether students that used the Knowledge Forum during prolonged periods constituted a community of learners. To do so, they traced their *Social Learning, Autonomy*, and *Active Engagement*.

2. Narrative inquiry as a central methodology to uncover teachers' pedagogy

The aim of this study is to explore the kind of community that the champion teachers who use SNSs in their teaching promote through their pedagogy. We partly rely on in-depth interviews in which teachers tell their stories — their experiences with students in their use of SNSs. The methodology we adopted is *narrative research*. In past decades, narrative research has become an important resource for studying personal, professional and academic knowledge in many disciplines, including education. Among the many uses of this methodology, one especially influential view holds that it is possible to learn about how teachers understand their professional practice by studying their life histories (Clandinin & Connelly, 1995; Connelly & Clandinin, 1999; Elbaz-Luwisch, 2007; Olson & Craig, 2001; Xu & Connelly, 2009). According to this methodology, a story is a portal through which a person enters the world and by which his experience of the world is interpreted and made personally meaningful (Clandinin & Rosiek, 2007). 'The story is the very stuff of teaching', contends Elbaz (1991, p. 3), 'the landscape within which we live as teachers and researchers, and within which the work of teachers can be seen as making sense.' Hence, it is possible to learn about teachers' personal practical knowledge (i.e. what teachers know through their teaching experience) by studying their life histories. Indeed, as stressed by Verd and López (2011), life histories and narratives are powerful tools for understanding individual's agency and personal experiences.

The attempt to understand teachers through narrative representations developed out of a general criticism of approaches to research in education, based upon positivist interpretations of natural science for establishing warranted knowledge (Fenstermacher, 1994). Narrative researchers claim that research within this positivist paradigm creates *knowledge-for-teaching* which is theoretical and abstract, rather than *teacher knowledge* (Xu & Connelly, 2009). In contrast to positivist educational research that focuses on the teaching process and its outcomes in order to evaluate knowledge, narrative research provides an inside perspective from the teachers themselves. Teachers know themselves, their educational situations, curriculum, students, and culture (Connelly & Clandinin, 1999; Xu & Connelly, 2009). This epistemic view lies at the heart of qualitative research, which commits to study the social world from the perspective of the interacting individuals (Denzin & Lincoln, 2011).

Similarly to Connelly and Clandinin (1999) and other scientists who adopt a narrative methodology, we wish to illuminate teaching practice (specifically their use of SNSs with students) by exploring teachers' professional knowledge as expressed in their narratives. Moreover, like other qualitative researchers, we study things in their natural settings, attempting to make sense of, or to interpret teacher practice in terms of the meanings teachers bring to it (Denzin & Lincoln, 2011). Our main goal is to *understand* why individuals choose to act in a certain way by exploring their past experiences as interpreted within the context of a particular story. It is important to note that the link here between past experiences and present teaching practice is a teleological one (Caduri, 2013, p. 46). Teleological explanations are designed to know the world in terms of the *telos* or purpose that guides events, thus the sort of explanation that we seek to offer is a teleological explanation of practice based on teachers' stories.

We sought to uncover the teachers' SNS-based pedagogies as they are realized through their practices and the kinds of communities these practices established. Our research question was: What are the kinds of communities that emerge from the teaching of the champion teachers who use SNSs in their teaching? To answer this question, we conducted semi-structured interviews. Our guiding questions were:

1) What do you do in your classroom?
2) Where and when do you engage with their students?
3) For what purposes (*telos*)?
4) What is the role of SNSs in your pedagogy?
5) Which values underpin your use of SNSs?

The general aim of these questions was to prompt teachers to tell their stories about their teaching practices and to articulate the rationale of their action. We hypothesized that through these stories, we would be able to identify to what extent the teachers fostered the constitution of a community of learners.

We chose five teachers who used social networks such as Google+ and Facebook in their classrooms, and whose names and activities were reported by many other teachers in Asterhan and Rosenberg's (2015) research. The five teachers were from five different high-schools in three large cities in Israel. Each interview lasted around an hour and half. It was recorded. We also collected screenshots of pages from the SNSs that they used with their students. We chose the pages that seemed to us to illustrate the stories the teachers told in their interviews. In order to have access to content and information of these pages, we became friends of the teachers on FB/Google+. Data were collected between August—December 2014. One of the teachers (the Science teacher) kept a diary in which she wrote her impressions about the lessons she planned or delivered. It was used as an additional source of data.

3. Five stories of teachers using SNSs

3.1. Fostering inquiry-based learning in science classrooms: the story of Abbi

Abbi (a pseudonym − all teachers' names are pseudonyms) is an experienced science teacher. She has been teaching science, geography and environmental education in high-schools for 22 years. She earned a PhD in Science Teaching. In her post-doctorate, she investigated the learning of science in informal settings. She also teaches courses on technology-enhanced learning in a college of education and develops programmes in teacher education at the University.

As a science teacher, Abbi created an ecological garden in the schoolyard of an integrative school in a large city in Israel. Her students spend a substantive part of their scientific inquiry in the ecological garden. Since all the data that students collect are published within a group FB page, the visibility of this project has drawn the attention of many teachers: In 2013, science educational researchers from Europe and the US visited the garden to learn about its merits as a space for learning-by-doing, inquiring and socializing. A few months later, a delegation from Latin American schools spent two days exploring the pedagogical processes that this environment entails.

Students were invited to explore nature as scientists. They first organized themselves in small groups. Each group decided on its own object of inquiry: butterflies, birds, natural scrubland, moist breeding, aquatic plants, bugs, and biological water purification are examples of topics groups of students have chosen as their object of research. Students were then guided to conduct a scientific study: each group focused its observations on the behavior of animals or on vegetation, and collected qualitative data (such as descriptions of biotic and abiotic organisms) as well as quantitative data (temperature, moisture, pH, radiation). The students collected photos and videos, wrote texts such as observation reports and organized the data in tables. They uploaded these documents to a FB page they shared with other groups. She also wrote in her diary:

> A typical 'digital notebook' includes: (a), the name of the group, the names of the group's members, profile pictures and a picture that represents the subject chosen by the group; (b) scientific background on the research subject that was written by the group members; (3) pictures and films that document the investigated topic.

Fig. 1 shows one example of a group FB page that displays the various data that its members documented as well as methods of documentation. The group focused on Aquatic Plants. As can be seen in the left side of the lower part of the FB page, all nine research groups were represented.

In addition to their uploading of the documented data on FB, the students used the 'digital notebook' as a mean to elaborate a scientific inquiry on the topic they chose. As Abbi wrote:

> This entails the identification of a research question and hypotheses, the design of a scientific study, data collection, the analysis of results, a discussion and conclusions.

Based on the data they collected, students were requested to have a discussion to define a research question and to clarify the dependent and independent variables, and the kinds of relationships between them. After agreement was reached, the group members posted their question in the class FB page together with videos or photos of the phenomenon that they wished to explore. Fig. 2a and b displays two examples of such postings done by the 'Aquatic Plants' and the 'Birds' groups:

Posting research questions on FB was an important event. Every group reflected on the work of other groups by asking for clarifications, suggesting alternatives, and commenting. Groups could capitalize on the communicational options that FB offered: posts, like, chat, share, or comments. Fig. 3 displays an example of FB discussion among groups on the first steps in an inquiry. All groups reflected on the Butterflies group's program of research.
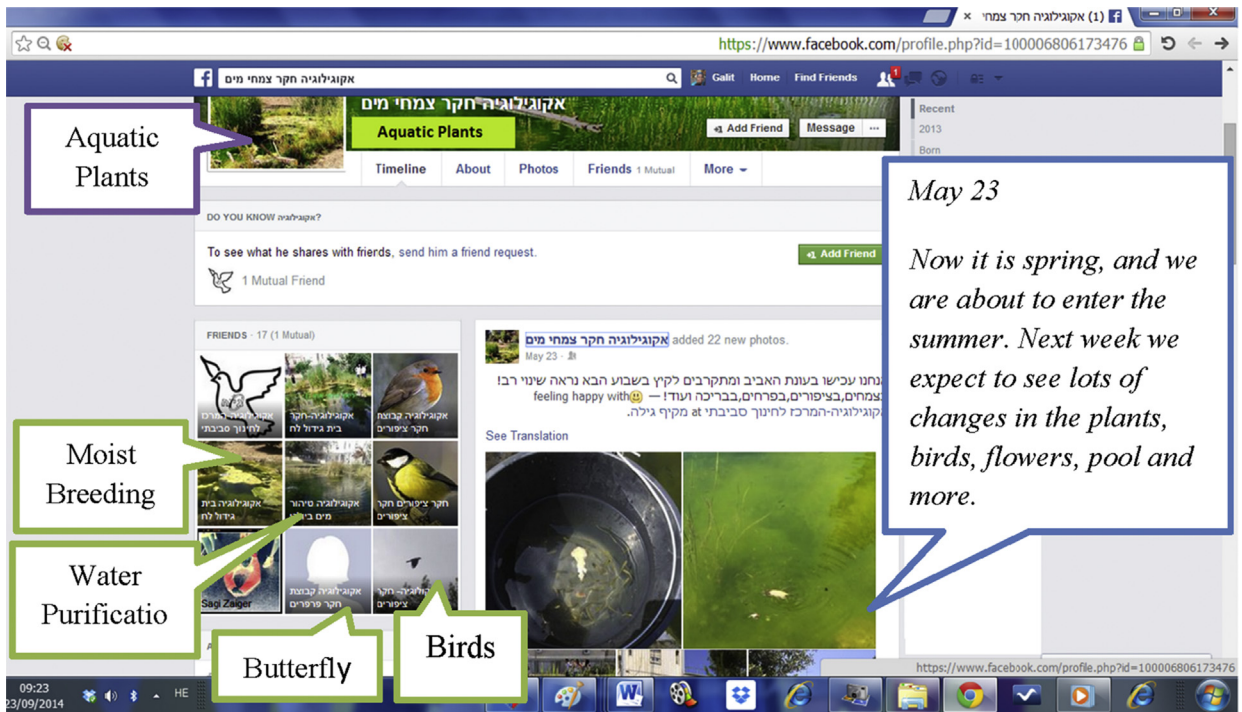
Fig. 1. Screenshot of the Aquatic Plants group FB page.

In this screenshot, the groups evaluated the Butterflies group's research question: in line 1 the Natural Scrubland group asked the Butterflies group "on which butterflies will you focus?" and the Moist Breeding group comments "interesting questions" (line 3). On line 4, the teacher asked the Butterflies group to "define the dependent and independent variable in every research question" as she probably felt that the quite superficial comments did not contribute to the development of scientific discourse. It seems that this question prompted the students to come to grips with the nature of the Butterflies group's research question (line 5—10): The Insects group challenged the logic of the Butterflies group's research question (line 5), while the Pool group addressed the hurdle of investigating such a complicated question. The dispute between the Butterflies and Insects groups related to the question of whether the research question corresponds to reality, that is, whether the dependent and independent variables behave this way in nature. While the Butterflies group contended that this is the case (line 5), the Insects group challenged their view by indicating that the butterfly's appearance (the independent variable) is influenced by its way of life, to suggest that the research question should be rephrased (line 7).

On line 9, the Pool group stated their disagreement with the Butterflies group's claim. They sayed: "I don't agree with you, butterflies group. This is why we do research, in order to investigate. Even if the final answer is negative and they incorrectly hypothesized, the answer doesn't have to be positive". Their response is an excellent example of meta-strategic thinking as they reflected on the thinking strategy that the Butterflies group used, and characterized it. By so doing, they moved the discussion from the concrete example of research question towards the abstract, the features of scientific research questions. Yet, when the Moist Breeding group asked: "do you have all the required tools to investigate the question?" (line 10), the discussion went astray and the teacher interrupted it again to invite the students to reflect on their thinking strategy (line 11). This time, the students did not pick up her comments and the discussion ended with the Butterflies Group's request to continue the discussion in a private channel.

Abbi was clear that this activity helps establishing a community of inquiry. She capitalized on the FB space to reflect on the students' questions, arguments, justifications and ways of reasoning. Sometimes she interrupted the discourse to pose questions to a certain group. By so doing she strove to enhance her students' meta-strategic knowledge. She wrote:

> Within the public discourse, I embed questions and comment on key points in the dialogue as to lead the students towards meta-strategic thinking. That is, thinking about the cognitive strategies that they employ in the formulation of research question. By so doing I lead the discourse that evolves in the FB from the concrete- the specific case or the specific research question- towards abstraction, that is, the formation of meta-strategic knowledge. This knowledge includes When, Why, How questions: … Why is it important to define accurate and measurable variables in scientific research? How can we identify/define variables? How do we form their relations? What will happen if we won't use research question strategic in the scientific research process? Etc.

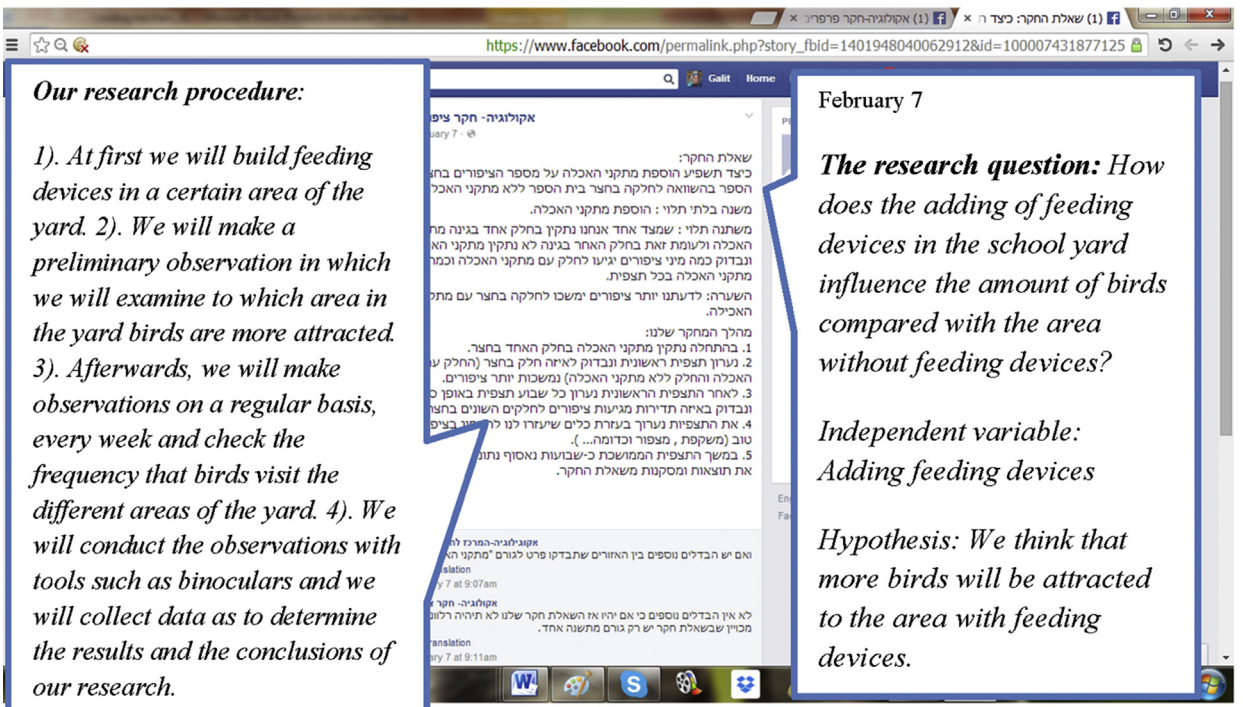Fig. 4 illustrates how teaching meta-strategic knowledge is possible within the group FB.

a.

b.

Fig. 2. a. The Aquatic Plants group posts research questions on the FB page. b. The Birds group posts research questions on the FB page.

This example is about learning the grammar of scientific inquiry: The teacher stirred the students to speak scientifically by asking them to define the dependent and independent variables in their research questions. In line 1, the Butterflies' members showed difficulty in accomplishing this assignment. The teacher interrupted the discourse in order to provide an answer to

Fig. 3. All groups reflect on the research questions of the Butterflies group.

their question (line 3). She blended scientific terminology together with everyday language when she writes: "Research question should express connection between variables-influential variable (independent variable), for example 'temperature' and influenced variable (dependent variable) such as 'rate of photosynthesis'. In response (line 4) the members of Butterflies group raised a meta-strategic question regarding the research question strategy: "why do we have to specify this way in every question?". This time the teacher did not give a straightforward answer, but repeated their question and prompted all groups to answer it (line 5). The reason behind her response might be her willingness to publicly discuss and negotiate the rules of the scientific discourse. The students realized that their research question had not been formulated according to the scientific grammar, as they said: "in our second research question we cannot define two variables". By saying "so maybe that's not a research question?" (line 6) the teacher emphasized again that scientific language should comply with rules.

Scrutiny of Abbi's practices in terms of time and space showed that every inquiry group had a private space within which the group members uploaded photographs they took in the physical world, record data, documented their thinking and engaged the teacher whenever she came to reflect on their work. Learning was self-directed since students were requested to determine autonomously the subject of their inquiry, the methodology, with whom to share their data and how, and the ways of interacting with their peers (posting, like, chat, sharing, sending message). As for the public space, the dialogue *between* the groups through FB or face-to-face, advanced the emergence of a community of inquiry. Unlike the private space where Abbi had little control of the learning process, within the public space she played a pivotal role in monitoring the discourse,

השיחה החלה 17 ינואר

אקולוגיה-חקר פרפרים
תגיבו לנו ((:

1. Butterflies: *Reply to us :):) We don't understand what to do.*

אנחנו לא מבינות מה עלינו לעשות .

אקולוגיה-חקר פרפרים
מה זאת אומרת משתנה תלוי ובלתי תלוי ?

2. Butterflies: *What does it mean dependent and independent variables?*

אקוגילוגיה-המרכז לחינוך סביבתי
שאלת חקר צריכה לבטא קשר בין גורמים - גורם
תלוי), למשל "טמפרטורה" וגורם מושפע (משתנה ת
הפוטוסינתזה".

3. Teacher: *Research question should express connection between variables-influential variable (independent variable), for example 'temperature' and influenced variable (dependent variable) such as 'rate of photosynthesis'.*

אקולוגיה-חקר פרפרים
למה אנחנו צריכים לפרט לגביי כל שאלה ככה ?

4. Butterflies: *Why do we have to specify this way in every question?*

אקוגילוגיה-המרכז לחינוך סביבתי
תחשבו ותענו לי אתן!

5. Teacher: *Think about it and answer. Does anyone have an answer to the question why do we need to form research question?*

למישהו יש תשובה: למה צריך לנסח שאלת חקר?

אקולוגיה-חקר פרפרים
בשאלת החקר השנייה שלנו איננו יכולות לכתוב שני גורמים (ושאלה:
.מהם ההבדלים הקיימים בין הפרפרים ?)

6. Butterflies: *In our second research question we cannot define two variables ("what are the differences between butterflies?").*

אקוגילוגיה-המרכז לחינוך סביבתי
אז אולי זו לא שאלת חקר?

7. Teacher: *So maybe that's not a research question?*

נראה ב-17 ינואר

Fig. 4. Butterflies group reflects on their own research question.

prompting interactivity and sharing and demonstrating how key words in the scientific language should be used. This is due to the fact that students were inclined to respond more to the teacher than to their peers: they replied to her questions, carried out the tasks she posts, asked her for clarifications and reported their progress. Abbi wrote:

> A possible way to enhance interactivity and bring about a sense of community is by giving students specific assignments to refer to their peers' responses. These tasks which we call 'reflection tasks' prompt students to answer their peers' questions, offer possible solutions to problems that were shared, and reflect on their peers' reports and arguments. They are mandatory …

In summary, Abbi exemplified blended learning in a science classroom. Students learned through different instructional methods: lecture or discussion, which are being delivered verbally in a face-to-face mode or is computer-mediated both synchronously and asynchronously, and involved different forms of guidance (tutoring, unguided group work, guided small group work, teacher-led forum discussions). Students shared information, discussed their research designs, considered their findings and reviewed the work of others within face-to-face communication and via FB. In addition to sharing, the way FB was used also cultivated mutual responsibility since members of this community were expected to act according to scientific norms. Being a public space where discussions developed and information was being distributed, FB allowed Abbi to develop her students' meta-strategic knowledge and move them from concrete data to abstract thinking.

3.2. Developing literary analysis through Google plus — the story of Goldie

Goldie is a senior literature teacher. She is active in in-service teacher education that blends technologies in classrooms. In her classroom, she uses Google+ as a means to develop her students' literary analysis and writing skills, as well as their creativity. The main benefit of Google+, she argues, "is that it allows a unique experience of learning in which students do not

learn *about* the literary work but rather learn to become one of its characters". This aligns with what Twining (2009) defined as 'learning through role play', in contrast to 'learning about', 'learning by doing', or 'learning by becoming'.

Every group of students created a Google+ profile of a certain literary character and wrote an essay. Students were also invited to communicate with other characters of the literary work and to react to them. They encountered a literary work and tried to experience a way of life, a time period, a culture, an emotion, a deed or an event as part of the interpretive work. They were required to use these experiences creatively and persuade their readers that their interpretation is plausible and coherent. Goldie described her pedagogy as follows:

> I use Google+ as a means to develop the students' interpretative writing skills that refine their understanding on different subjects. I use the social network less as a tool to enhance communication between teacher and students. For me, Google+ is a learning environment in which we jointly construct an imaginary reality that relates to what they learn and allows the students to act within it …

Goldie described the recent experience of her students learning the play 'The Miser' by Molière and said:

> The main virtue of the play is that it deals with universal themes such as love, parents' will versus children' desire, marriage, intrigues, money, interests, and loyalty. However, these ideas are enfolded with a language that disconnects the children from the play … There are difficulties in teaching this play. That's a 17th century play, which was written in archaic language that is difficult to understand and is hardly used. Moreover, the students are not familiar with the reality that is manifested in the play or with the genre itself.

In order to tackle those barriers Goldie gave the students an assignment in which they were required to use Google+ to enable the characters of the play to meet and communicate. Fig. 5 displays a screenshot of the instructions given to the students:

Students' reactions were positive, Goldie reported. They showed enthusiasm in writing their interpretation of the events, wrote long texts and communicated their interpretations with humor. Fig. 6 displays a screenshot, where a group of students personified Master Jacques, the cook and coachman of Harpagon (the miser).

This screenshot demonstrates the students' interpretation of certain events in Hapagon's house from Master Jacques' point of view. The students wrote extensively on what Master Jacques experiences, thinks and believes.

Fig. 5. The teacher gives instructions.

March 18, 2012

1) Finally the moment has arrived! The Revenge against Cléante is starting! What a perfect timing. When Harpagon's money was stolen I came up with a brilliant idea. Cléante, your end is coming soon. And now in a version that you can understand: Today Harpagon was being robbed (and I'm reluctant since on one hand Harpagon is really a stingy, and he deserves to feel what he makes other people to feel when he refuses to give them money, but on the other hand, he is my master and he is important to me- I don't want him to get hurt) and being under pressure he started to mumble to himself, holding his body. Finally he called a policeman to investigate the crime scene. When Harpagon called me to give my testimony, I decided to instill Cléante in the plot and Harpagon, oh his I.Q is so low, believed every word I was saying and he even was surprise. Maybe the loss of money causes him to suspect in everyone, so I rode the momentum.

March 14, 2012

2) The romances by these days are so complicated…ho… and what did we discover this time? That Harpagon is stingy not only with his money, but also with his love. Today it was revealed to Hrpagon that his son Cléante is in love with Mariane-just as he, which obviously Harpagon doesn't like and completely unacceptable in his house. And I? I was walking innocently in the house when suddenly Harpagon approached and asked me to judge between him and his son. He tries very hard to put me in situations that I cannot escape from. If I agree with Cléante- Harpagon can hit me, decrease my salary or even fire me, and if I agree with Harpagon- I will lose my loyalty to Cléante, but he is very important to me. Of course, I didn't have any choice so I tricked Cléante and made him believe that Harpagon agrees with him, and made Harpagon believe that Cléante agrees with him- How will they sort it out? I truly don't have a clue… we just have to wait and see. And after I helped Harpagon to sort out his problem with his son, I expected that he would raise my salary or something, and when he put his hand into his pocket — he took out a handkerchief. How stingy can a person be?
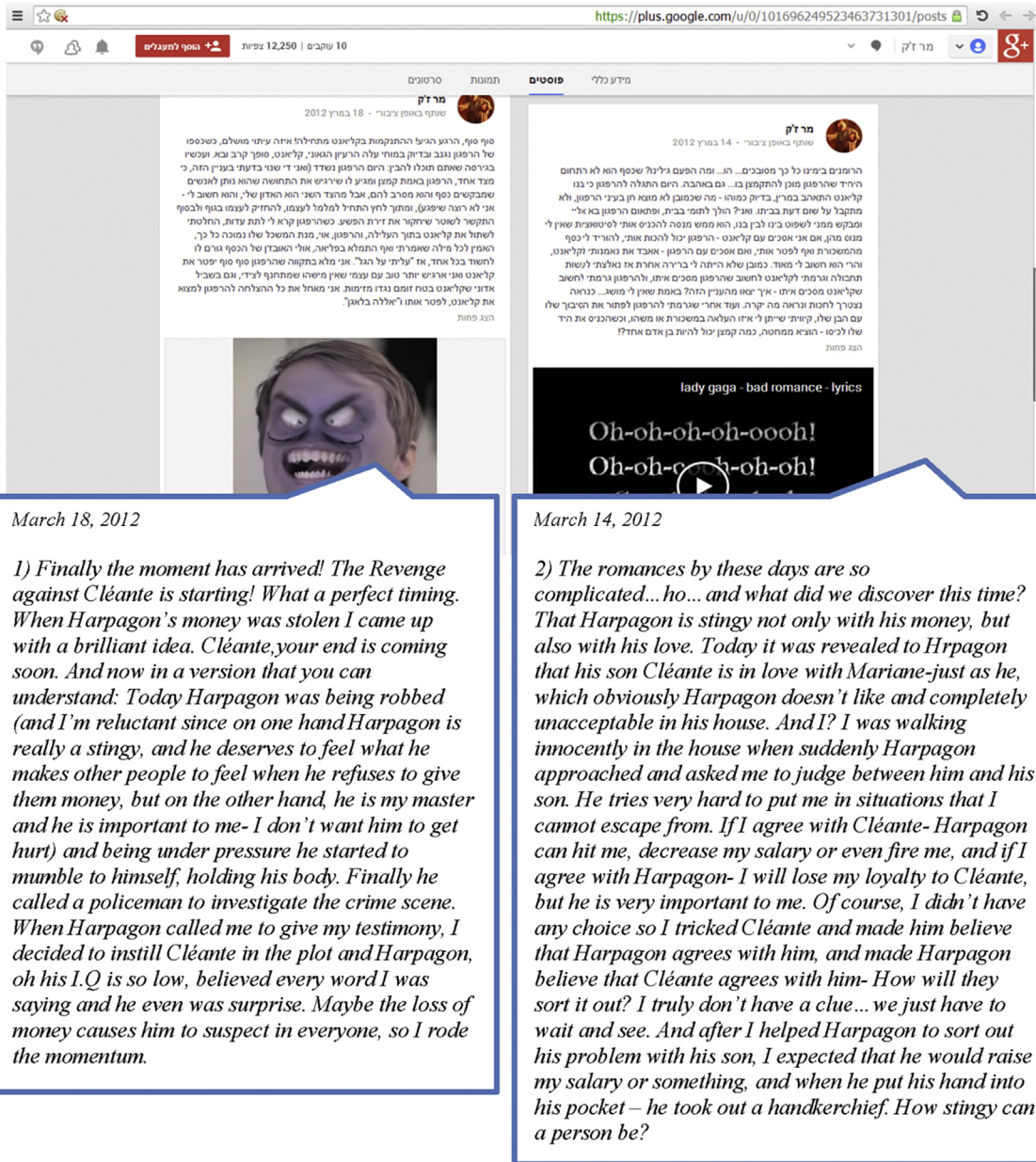
Fig. 6. Screenshot of Master Jacques' stream.

Stream 2 opens with Master Jacques' provocative statement that romances are so complicated, as it seems that Harpagon and his son are both in love of Marianne. He then depicts the following scenario: "I was walking innocently in the house when suddenly Harpagon approached and asked me to judge between him and his son. He tries very hard to put me in situations that I cannot escape from. If I agree with Cléante, Harpagon can hit me, diminish my salary or even fire me, and if I agree with Harpagon, I will lose my loyalty to Cléante who is very important to me". Here, students explain how Master Jacques *feels* and *thinks* when being asked to judge between Harpagon (his employer) and Cléante (Harpagon's son). First, they convey Jacques' helplessness by saying that Harpagon deliberately puts him in impossible situations. Then, they explain Jacques' dilemma. By noting that Harpagon might harm Master Jacques if he sides with Cléante, the students express Jacques' anxiety that he might get hurt physically. They depicted then Jacques' resolution and his disappointment with Harpagon's reaction: "I expected that he would raise my salary or something, and when he put his hand into his pocket — he took out a handkerchief. How stingy can a person be?". This lively piece of writing borrows everyday language to express the insulted and disappointed voice of Master Jacques. The students also accompanied Master Jacques' words with a video of Lady Gaga singing "bad romance", thus adding a further dimension to the plot.

Playing the role of the characters in the play entailed not only interpreting what they think and feel, but also communicating with other characters of the play. Fig. 7 exemplifies a dialogue between characters.

This screenshot demonstrates two dialogues - between Frosine and Harpagon, and between Frosine and Mariane - that appear within Frosine's Google+ stream. On line 1 Frosine, the matchmaker, says decisively that she wants payment for her work. The students expressed her anger by posting: "When will this damned Harpagon ever give up??!" They add Abba's "Money, Money, Money" from YouTube, probably to emphasize Frosine's desire for money. Harpagon (line 2) replies that she didn't do what she was supposed to do; therefore he doesn't owe her money. By further posting "You're simply greedy! I will never give up! especially when it comes to money" the students bring their interpretation of Harpagon: a man who shows unlimited passion to money. Note how the students ironically call Frosine greedy and add the song of Kanye West "Gold Digger". On line 3, Frosine replies assertively. The students manage to convey her impatience with Harpagon's refusal to pay together with a sense of respect towards him ("excuse me my dear sir").

The dialogue between Frosine and Mariane opens with Frosine's description of Harpagon's behavior (the length of the stream is 27 lines). Mariane shares with Frosine in line 1 her impression of Harpagon ("an awful man") and her hope to finally marry his son. Frosine replies (line 2) that she will sort it out ("I will cook up a scheme"). Mariane (line 3) expresses her gratitude and Frosine once again reassures her that things will work out since she hatched a plot. In this dialogue the students offer their own analysis of the characters: while Frosine is an active schemer, Mariane is naïve and passive.

Reflecting on the differences between traditional pedagogy and social network based learning Goldie said:

> When you think about the actions that students need to carry out in school, you realize that most of the time they answer informative questions. Literature teachers who teach this play usually pose questions about the content, characters and plot. Here, I don't ask questions. The students need to construct the character's stream of social network while addressing issues such as plot, characters and scenes. They choose the events that they want to relate to. In addition they need to portray the character visually -through the profile photo, and textually - by suggesting the character's interpretation for certain events or replying to what other characters say. Again, instead of writing about the character, they need to be the character.

Fig. 7. Screenshot of Frosine Google + stream.

For Goldie, Google+ allowed students to act within imaginary reality since "you can act as someone else: you make your own profile; identify with the character and narrate". Students developed their sense of empathy, imagination, and the ability to make a claim about the work and support it with evidence from the text as well as reasoning and analysis. They communicated to others the meaning they, as a character of the play, have constructed. To some extent, Goldie contended, "they write a new play that is grounded in the way that they have enacted the character and the connections they made with others".

Being active in the group Goggle+ entailed self-directed learning since students decided the character they want to play, how it would be presented in the Google+, and the events that they analyzed. This entailed not only responsibility for their learning, but also autonomy concerning the resources they use in their work.

3.3. Enhancing historical thinking skills- the story of Yaniv

Yaniv is a history high-school teacher. He has taught history for 14 years. Being computer savvy, he realized the pedagogic potential of social networks as a means to enhance historical reasoning. The role of FB is to provide appropriate preparation for face-to-face dialogues in which students discuss the epistemic merits of historical stories, their interpretations and how historical knowledge can be built. Before lessons, he typically gave them an assignment in which they needed to watch a movie, read a paper or a chapter in the textbook or opened a link to a website and watched photographs. Each of these resources held a different point of view with regard to the same historical event. He said:

> Being exposed to diverse and sometimes incompatible stories, students often come embarrassed and confused to the lesson […] What is the truth, what really happened? I don't give them a straightforward answer. Instead I ask them 'what do you think the truth is'?

The sharing of multiple resources through FB also allowed Yaniv to prepare his students for a collaborative dialogue within which they co-built knowledge. He further described what happened in his lessons:

> I can't perform frontal teaching in History lessons anymore, they ask for those discussions. They want me to upload learning materials, they want to learn individually. They don't mind learning at home. They don't mind if we talk about copyrights […] They want the dialogue in class, I let them speak, I don't withhold them.

In another occasion he declared:

> I allow different voices to be heard and expressed in our discussions yet, there is no anarchy in our classroom. I don't allow racist views or comments. I give them a great deal of freedom to speak … write on the board what they say. I do share with them my opinion … I must tell them, but it's forbidden for me to allow one voice only.

For him, the role of FB is not to transmit fixed knowledge to be memorized, but rather to provide conditions for *actively engaging in classroom conversations.*

Distributing learning materials via FB also allowed Yaniv to teach History through the "flipped classroom model", which demands personal engagement of students at home. As students came to history lessons with prior knowledge this enabled Yaniv to spend time teaching students the pertinent skills to learn autonomously:

> At the beginning of the year, the students are very dependent. They keep on asking me to summarize what I say … to dictate the content of the lesson. I tell them: I'm not a dictator; you're going to learn how to encapsulate on your own … We work together on how to express their opinion … and how to look critically on what they see. We read John Locke, Thomas Hobbes and Montesquieu and we talk about what does it mean to dare to know, to dare to challenge. I teach them about the ideas of Pico della Mirandola. I tell them, you shouldn't take things as they are. It is wrong to accept whatever we are told without questioning it … One of the students wrote to me in his project: It might be not as good as you expect, but hey I dared to think!

Yaniv spoke here about various learning skills that he teaches his students in order to enhance their ability to think and investigate like independent historians. He spends time in his lessons teaching them how to read a question, write an answer and manage their time. He also dedicates time for teaching them how to construct historical arguments, critically evaluate historical resources, read maps and analyze photographs. This way, argued Yaniv, they become able to independently deal well with the tasks of historians, i.e. evaluating, criticizing, narrating, arguing and justifying.

FB served then as a tool for preparing lessons by distributing multiple sources and for posting final essays, after classroom activities. We have no data about discussions and dialogues in groups or in the whole class in the social network, except for the testimony of the teacher who reports they actually took place. The sources used were rich, and competed or conflicted with each other. The essays seemed highly integrative. However, one can have the feeling that in his report, Yaniv said too much: Too much Hobbes or Montesquieu, too much good learning that sounds as if it comes from a textbook. We may be being unfair to Yaniv and classroom talk might have revealed the kind of critical discussions characterizing the historian's craft. However, the temptation to confuse a good design with the deep engagement of students in learning tasks is considerable. FB facilitates the distribution of excellent sources and the transmission of instructions, but this is design only. There is a danger of focusing on the design, and confusing the design intentions with the actual activities the students engage in.

3.4. Promoting moral community through geography lessons – the story of Gilad

Gilad is a charismatic teacher who has taught Geography in high-school for 7 years. He blends FB into his lessons by exploiting its power to share with his students learning materials such as videos, presentations, photos, and information. As he describes:

> When we learned about geology I shared with them movies that describe the development of volcanoes, tsunamis and earthquakes … short movies that visualize those processes. It was very helpful. Think about it … in a ten minutes movie they learn the content of a whole lesson. It allows me to teach them much more topics. Sometimes we see it in class and sometimes it's their homework.

In addition, Gilad uses FB as a means for preparation for exams by scheduling specific dates for posting questions and exercises. Within these periods, argues Gilad, FB communication is prominent, with some students comfortable to post questions and answer publicly, while others prefer to use the private channel to share their doubts with Gilad. In any case, preparation for exams yield much interaction through FB. This use of FB reflects what is done by most teachers who use FB (Asterhan & Rosenberg, 2015).

However, for Gilad there is another reason to use FB: teaching the students how to act ethically in cyberspace. In contrast with Abbi and Yaniv's objectives to create a community of *inquiry* in Science and History, Gilad aspires to form a *moral* community whose members respect each other and act ethically. He believes that his vocation is to grant his students the suitable skills to make sound, moral judgments, to think critically and to "remember that real people exist behind the words" whenever they engage with others on the net. To that aim he initiates activities that are designed to address issues that lurk in FB and that students may never have thought about:

> At the beginning of the year, I open with the students our group FB page and ask them to click on my profile picture. Because of my privacy policy, they cannot see anything but my photo. Then I ask them to click on one of the member's profile picture. Suddenly they realize that they are visible to everyone on the internet. They understand that every person on Facebook can see their photos, so they ask me: how can I prevent it? I talk with them about privacy policy and the need to carefully define it.

In addition to designed activities, Gilad seeks opportunities to discuss ethical issues, which emerge from the groups' FB talk. Whenever he observes an inappropriate behavior such as provocative replies or vulgarity, he brings it to the public space to discuss it. He gives the following example:

> One of my students took a picture of me, while I was teaching and posted it on the group FB page. He didn't ask for my permission, nor did he let me know about it. We spoke about it in class … how problematic it is to post pictures of others without getting their permission.

In another occasion

> A student's brother logged in to the group FB page and posted that he came out of the closet. I immediately replied to him that this page is established for pedagogical purposes only. There is no room for such assertions in this page, I said to him. Afterwards, the student explained to me that his brother was trying to play a practical joke on him.

The FB dialogue confirms that Gilad uses such examples to discuss ethical issues. The aim of the face-to-face dialogue is to establish a responsible, respectful and moral community.

3.5. Organizing the learning of geography with FB – the story of Ilana

Ilana is a senior high-school Geography teacher. She has been teaching Geography for 25 years. She has been nominated by the Ministry of Education as one of the administrators of the Geography teachers' FB page. This allows her to share with them information about curriculum, exams, courses and regulations. This sharing is done "top-down" to transmit official information and instructions. Ilana also uses FB to communicate with her students in a way that resembles the way other teachers use it to organize their learning (to send sources and instructions), as shown in Asterhan and Rosenberg's (2015) study. For her, "FB is a place where students exercise and expand their learning". The group is defined as a learning group where students can ask questions, receive presentations and up-to-date learning materials. She says:

> What pushed me to construct this learning group was the fact that I was teaching Geography in four different schools. So I wanted to connect everyone, especially before the matriculation exam, in order to allow them to ask questions. My thinking here is totally geographic. Facebook is a good platform to upload files, links and presentations. The major advantage is that I control the content. It was made clear to the students that Facebook is a learning group. For example, before exams we learn in Facebook synchronously; I schedule two hours in which everyone is invited to ask questions. In other occasions, I share with my students articles from newspapers or videos on current geographic affair

(earthquake, typhoon, volcano and immigration). Topics that I teach are dynamic and changing, so I find myself updating the students on relevant news at least once a lesson. Facebook is really helpful.

FB for Ilana is a place where learning takes place in terms of transmitting information students need to acquire. She makes clear that FB "does not substitute for me", but rather functions as an *Agora* — a gathering place where students meet, share and jointly learn. Yet, Ilana acknowledges the fact that FB is not fully utilized as students hardly communicate with each other. They do not constitute a community of learners. They merely use FB as a conduit to receive assistance from Ilana as the expert. According to Anderson et al.'s model, Ilana uses FB for *design and organization* (e.g., imposing time for drill and practice before exam, or sending external materials), and for *direct instruction* (e.g., referring students to information resources).

4. Champion teachers' fostering of communal knowledge building with SNSs

Ilana's story is about using FB to enhance tradition. Her pedagogy is in line with Anderson et al.'s (2001) first category of design and organization, and third category of *direct instruction*: for her, FB is a platform to present content, to direct questions to the group or to individual students, assess students' comments, diagnose misconceptions and provide further resources for learning. Her role is that of a content provider. For her, "FB is a place", a virtual classroom, in which she is the expert. She controls the distribution of sources and their use through FB. She controls the instructional process, delivers the content to the entire class and tends to emphasize factual knowledge. The pedagogical model that guides Ilana's actions consists of *transmission of information* and less about knowledge building or collaborative work. Her motivation to use FB derives from her need to communicate with many students from different schools at the same time. Ilana understands the potential that FB holds as a geographical means: FB functions as a gathering place which allows her to do whatever she routinely does in her classroom, but with several classes and at the same time.

In contrast to Ilana's story, we will see that a communal knowledge building characterizes the other four teachers' pedagogies. True, the stories of Abbi, Goldie, Gilad and Yaniv showed that, like Ilana, they capitalize on SNSs for *design and organization*. For example, Yaniv sent documents to all students in preparation for the following lesson. However, when we first used Anderson et al.'s (2001) framework, we found that *facilitating discourse* was too narrow to enable a full description of the pedagogies we observed. We will show that for three of the four teachers, scientific knowledge is jointly built and students are being taught how to conduct scientific studies. In Scardamalia and Bereiter's (1994) words, the community is real (and not fictional) when it gives the students "a feel for speaking and being responsible to a broader audience" (p. 277), which makes them feel like members of a large group of young researchers, who face similar challenges in trying to investigate nature. We will use the categories elaborated by Zhang et al. (2009) — *Social Learning, Autonomy*, and *Active Engagement* to show that with the help of SNSs, the four teachers facilitated the constitution of communities of knowledge building.

4.1. Social learning

According to Scardamalia and Bereiter (1994, p. 270) "the term *building* implies that the classroom community works to produce knowledge - a collective product and not merely a summary report of what is in individual minds or a collection of outputs from group work". Practically speaking, this means that "the community database serves as an objectification of a group's advancing knowledge, much as do the accumulating issues of a scholarly journal but with additional facilities for reframing ideas and placing them in new contexts (Scardamalia & Bereiter, 1994, p. 277). Indeed, in these four stories, SNSs played a central role in the constitution of the community. Yet, this role is different in each story. In science, FB helped in the constitution of a virtual community of young explorers. Students communicated with each other by commenting, asking questions and providing critiques on their peers' research questions through FB modality. Students indeed negotiated their research questions and methods, and what they expected to find, and FB provided an appropriate space for these negotiations. The public dialogue was aimed at the building of scientific knowledge on the same concrete environment (the ecological yard) but with different foci (birds, insects, plants, and butterflies). In literature, the students in Goldie's lessons communicated within an imaginary community as they described and related to a fictional event. In History, FB helped the constitution of community by preparing the inquiry, which happens in a face-to-face mode. Yaniv's story showed how FB facilitates the bringing forward of various voices from historical documents confirming or contradicting different historical 'truths'. Coming to history lessons after being exposed to diverse points of views by different types of historical evidence, prepared students to engage in a dialogue within which they negotiated meaning. In ethical thinking, FB activity served as an object for face-to-face collective reflection.

4.2. Autonomy

The Facebook modality was also prominent in another characteristic of the four stories, the autonomy of the students. In all cases, the personal profile and the public space that FB allows were central. In science lessons, students were free to decide which natural phenomena to investigate, how to conduct studies and which material to upload to FB in the digital notebook. In literature lessons, students could choose which scenes in the play they write about in the group FB and how to construct their own character's profile. Goldie was the director of the play. She did not interrupt the show to give instructions to the actors-students on how to play the characters they personified. Her main work started before "the curtain goes up". This

theme also appears in the work of Scardamalia and Bereiter (1994) as they speak about knowledge communities in terms of the development of students' agency. In our case, shared artifacts produced in SNSs mediated their progressive collective taking of responsibility. As for Gilad, he acted to confer responsibilities to his students in their cybernetic behavior. He brought their profiles and their FB discussions, as well as his, to negotiate new norms of communication. This care to foster the autonomy of learning groups contrasted with Ilana's Geography lessons in which she controlled as an expert the content to be learned, and the learning process of the students.

4.3. Active engagement

Another characteristic of the four stories is the active engagement of the students, which entails commitment to Scardamalia and Bereiter's (1994) idea that computer-supported intentional learning environments allow students to be "placed center front in the knowledge-creation process as authors of databases, not simply reviewers of databases created by others" (Scardamalia & Bereiter, 1994, p. 277). In the present study, we have seen how students served as legitimate partners in knowledge building by collecting data, raising hypotheses, checking them, playing roles in a play and inventing dialogues, or negotiating arguments publicly. This productive engagement was the consequence of meticulous design of the way in which the Social media were used, through the provision of relevant resources, the conferring of authority and accountability to students.

Social Learning, Autonomy, and *Active Engagement*, are expressions of the constitution of Knowledge-Building Communities. Knowledge Forum (the environment Scardamalia and Bereiter developed) enabled this constitution, and SNSs can too. Knowledge Forum was designed to foster cognitive and social dimensions of community building. We argue that SNSs bring an additional dimension to the constitution of a community of learners – the identification of the individual to his/her community, or what we call their *learning to be* in a community of learners.

4.4. Learning to be in a community of learners

The most profound characteristic emerging from the four stories that involved the building of a community concerns ontology. Participants appropriated the norms of established practitioners in that field (Brown & Adler, 2008) through the iterated enactment of disciplinary practices. They designed activities with SNSs to encourage students to work together in a common space, either virtual or actual, and to participate peripherally in each other's design process. There was more, though. Students were denoted as protagonists – actors in a play, scientists or historians. They also interacted as such protagonists. Twining (2009) already stressed the contribution of technologies for learning by playing a role and learning by becoming. Our study provides data about the distinctive role of SNSs to learn to be in their community, and about the mechanisms that govern this type of learning. SNSs provided a platform for iterated interactions between these denoted protagonists. This platform offers iconic representation of participants/players and interactions among them. Wortham (2003) studied two kinds of activities in which a denotational/interactional parallelism occurred: participant examples (an activity of role-playing in which protagonists identify with their role), and autobiographical narratives. He showed that this parallelism yields more robust presupposition of identities and events than normally occurs in everyday interaction. Wortham (2003) showed that the parallelism between playing the role of a character in a story is a powerful mechanism for accomplishing *social identification*. In this situation, participants are not only denoted as protagonists but enact relationships with other characters. We argue that, similarly, SNSs provide representations for the denotations of the protagonists as well as of their interactions, whereby accomplishing social identification. The role of SNSs in social identification was salient in the story of Goldie. Goldie's practices reveal a unique and inspiring pedagogy in which students develop their interpretative writing skills by communicating with each other as characters in a play. Goggle+ operates as a stage, while the students are the actors and the teacher is the director of the play. Students post long and detailed streams in which they describe certain events from the character's point of view. There is evidence of meaningful interactions between the characters within Google+ too. These interactions entail interpreting the character's personality and her relations with other characters in the play. According to Goldie, students "write a new play that is grounded in the way that they have enacted the character and the connections they made with others". Students switch their epistemic view in terms of learning *to be* the characters instead of learning *about* the literary work. As they need to *be* the characters of the play and to interact with others as such, this involves their personal knowledge, since they need to know the character's nature, values, thoughts and emotions, as well as what the other characters feel, think and believe when interacting with them in Goggle+. By being active in the play, they deepen their mutual understanding on the characters and the plot.

In the others cases, social identification consisted in gradually acting as historians, scientists, or ethical human beings. In science, they are denoted/represented as Butterflies or Natural Scrubland groups and interact as such with their peers. FB is a learning space within which students investigate their surroundings and refine their meta-strategic knowledge; they learn how to conduct a scientific research and to become scientists.

In summary, we have heard the voices of five champion-teachers who dared to instigate new education practices by leveraging the pedagogical potential of SNSs. Four of them encouraged students to be in inquiry or moral communities, to become autonomous and engaged in learning tasks. One of them encouraged her students to consume information and to answer ready-made questions. In four cases, SNSs helped students learning to be members of diverse communities of knowledge building. This belonging to a community of knowledge building includes but is far beyond what Anderson et al.

(2001) call the creation of knowledge-building community by the teacher. It is more than modeling appropriate use of language and behavior, or encouraging the students' participation. Through the denotational/interactional parallelism afforded by SNSs and that enabled social identification, students learned to be part of their community.

Each of the five champion teachers had personal values and beliefs about learning and teaching before they used SNSs. We concur with Lund (2004) who claimed that technologies amplify the teacher's vision of teaching and of learning; they help teachers realize their pedagogy more radically. SNSs helped Abbi, Goldie, Yaniv and Gilad who probably were committed to progressive pedagogies to realize them by helping their students be part of a community of Knowledge Building. Ilana's story — the most traditional of these teachers, was also radical; with the help of FB, she could stretch her arm as far as the homes of her students to remind them what to read and when, and especially to prepare them for exams by tackling exam questions from previous years.

5. Future research and practical implications

We have observed champion teachers who used SNSs to implement new pedagogies. We based our observations on SNS conversations among students, on some of their products and on semi-structured interviews of the teachers. This approach is incomplete. For example, we did not include reports by the students who experienced SNSs-based pedagogies. Students' testimonies about their experiences of learning with SNSs, especially about their communal experiences, is a natural research direction that should provide a more complete picture of the pedagogical changes that SNS trigger among champion-teachers.

As already noticed, the choice of the five champion-teachers relied on Asterhan and Rosenberg's study in which 'regular' interviewed teachers mentioned these champion-teachers as disrupting traditional pedagogies. These 'regular teachers' did not adopt their pedagogies, but knew about their practices, since the champion-teachers were proactive and shared their 'stories' widely. We anticipate that sharing these examples will support other teachers in using SNSs to enhance their pedagogy, both by providing them with pedagogical models that they might adapt for their own discipline and by showing the ways in which they can advance ideals of democracy, collaboration, creativity and respectful criticism.

References

Anderson, T., Rourke, L., Garrison, R. D., & Archer, W. (2001). Assessing teaching presence in a computer conferencing context. *Journal of Asynchronous Learning Networks, 5*, 1–17.

Asterhan, C. S. C., & Rosenberg, H. (2015). The promise, reality and dilemmas of secondary school teacher-student interactions in Facebook: The teacher perspective. *Computers & Education, 85*, 134–148.

Aydin, S. (2012). A review of research on Facebook as an educational environment. *Educational Technology Research and Development, 60*(6), 1093–1106.

Bliuc, A. M., Ellis, R., Goodyear, P., & Piggott, L. (2010). Learning through face-to-face and online discussions: Associations between students' conceptions, approaches and academic performance in political science. *British Journal of Educational Technology, 41*, 512–524.

Brown, J. S., & Adler, R. P. (2008). *Minds of Fire: Open Education, the Long Tail, and Learning 2.0.* available at: http://www.educause.edu/ir/library/pdf/ERM0811.pdf.

Caduri, G. (2013). On the epistemology of narrative research in education. *Journal of Philosophy of Education, 47*, 37–52.

Clandinin, D. J., & Connelly, F. M. (1995). *Teachers' professional knowledge landscapes.* New York: Teacher College Press.

Clandinin, D. J., & Rosiek, J. (2007). Maping a landscape of narrative inquiry. In D. J. Clandinin (Ed.), *Handbook of narrative Inquiry: Mapping a methodology* (pp. 35–75). CA: Sage Publications.

Connelly, F. M., & Clandinin, D. J. (1999). Knowledge, context, and identity. In F. M. Connelly, & D. J. Clandinin (Eds.), *Shaping a professional identity. Stories of educational practice* (pp. 1–5). New York: Teacher College Press.

Denzin, N. K., & Lincoln, Y. S. (2011). Introduction: The discipline and practice of qualitative research. In N. K. Denzin, & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (pp. 1–29). Sage Publications Inc.

DeSchryver, M., Mishra, P., Koehler, M., & Francis, A. (2009). Moodle vs. Facebook: Does using Facebook for discussions in an online course enhance perceived social presence and student interaction? In I. Gibson (Ed.), *Proceedings of the society for information technology and teacher education international conference* (pp. 329–336). Chesapeake, VA: Association for the Advancement of Computing in Education.

Elbaz-Luwisch, F. (2007). Studying teachers' lives and experience. In D. J. Clandinin (Ed.), *Handbook of narrative inquiry: Mapping a methodology* (pp. 357–382). CA: Sage Publications.

Eyal, O., & Yosef-Hassidim, D. (2012). Managing educational champions: Entrepreneurship in schools. *Journal of School Leadership, 22*(1), 210–255.

Fenstermacher, G. (1994). The knower and the known: The nature of knowledge in research on teaching. *Review of Research in Education, 20*(3), 3–56.

Geocartography Knowledge Group. (2011). *Facebook activities: Students, teachers and parents* (in Hebrew). Retrieved 4/11/2012 from http://data.isoc.org.il/data/151.

Greenhow, C., Robelia, B., & Hughes, J. H. (2009). Web 2.0 and classroom research: What path should we take now? *Educational Researcher, 38*, 246–259.

Hakkarainen, K. (2010). Learning communities in the classroom. In K. Littleton, C. Wood, & J. Kleine Staarman (Eds.), *International handbook of psychology in education* (pp. 177–225). Emerald Group Publishing.

Junco, R. (2012). Too much face and not enough books: The relationship between multiple indices of Facebook use and academic performance. *Computers in Human Behavior, 28*, 187–198.

Kirschner, P. A., & Karpinski, A. C. (2010). Facebook and academic performance. *Computers in Human Behavior, 26*, 12347–21245.

Lenhart, A., Purcell, K., Smith, A., & Zickuhr, K. (2010). *Social media & mobile internet use among teens and young adults.* Report for the Pew Research Center. Downloaded (27/7/2014) from http://uploadi.www.ris.org/editor/1267315614PIP_Social_Media_and_Young_Adults_Report.pdf.

Lund, K. (2004). Human support in CSCL: What, for whom, and by whom? In J. W. Strijbos, P. Kirschner, & R. Martens (Eds.), *What we know about CSCL: And implementing it in higher education* (pp. 167–198). Dordrecht. The Netherlands: Kluwer Academic Publishers.

Madge, C., Meek, J., Wellens, J., & Hooley, T. (2009). Facebook, social integration and informal learning at university: 'It is more for socialising and talking to friends about work than for actually doing work'. *Learning, Media and Technology, 34*, 141–155.

Manca, S., & Ranieri, M. (2013). Is it a tool suitable for learning? A critical review of the literature on Facebook as a technology-enhanced learning environment. *Journal of Computer-Assisted Learning, 29*(6), 487–504.

Olson, M. R., & Craig, C. J. (2001). Opportunities and challenges in the development of teachers' knowledge: The development of narrative authority through knowledge communities. *Teaching and Teacher Education, 17*, 667–684.

Palmer, S., Holt, D., & Bray, S. (2008). Does the discussion help? The impact of a formally assessed online discussion on final student results. *British Journal of Educational Technology, 39*(5), 847−858.

Roblyer, M. D., McDaniel, M., Webb, M., Herman, J., & Witty, J. V. (2010). Findings on Facebook in higher education: A comparison of college faculty and students uses and perceptions of social networking sites. *Internet & Higher Education, 13*, 134−140.

Scardamalia, M., & Bereiter, K. (1994). Computer support for Knowledge-building communities. *Journal of the Learning Sciences, 3*, 265−283.

Teclehaimanot, B., & Hickman, T. (2011). Student-Teacher Interaction on Facebook: What students find appropriate. *TechTrends, 55*, 19−30.

Twining, P. (2009). Exploring the educational potential of virtual worlds—Some reflections from the SPP. *British Journal of Educational Technology, 40*, 496−514.

Valkenburg, P. M., & Peter, J. (2007). Preadolescents' and adolescents' online communication and their closeness to friends. *Developmental Psychology, 43*, 267−277.

Verd, J. M., & López, M. (2011). The rewards of a qualitative approach to life-course research. The example of the effects of social protection policies on career paths. *Forum Qualitative Research, 12*.

Wang, Q., Woo, H. L., Choon, L. Q., Yang, Y., & Liu, M. (2012). Using the Facebook group as a learning management system: An exploratory study. *British Journal of Educational Technology, 43*, 428−438.

Wortham, S. (2003). Accomplishing identity in participant-denoting discourse. *Journal of Linguistic Anthropology, 13*, 189−210.

Xu, S., & Connelly, F. M. (2009). Narrative inquiry for teacher education and development: Focus on English as a foreign language in China. *Teaching and Teacher Education, 25*, 219−227.

Zhang, J., Scardamalia, M., Reeve, M., & Messina, R. (2009). Designs for collective cognitive responsibility in knowledge-building communities. *The Journal of the Learning Sciences, 18*, 7−44.