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Social capital in high-schools: teacher-student relationships within an online social network and their association with in-class interactions and learning

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ABSTRACT

With technological development, social networking has become a powerful resource for building relationships, improving collaboration and facilitating learning processes. However, while the majority of educational research on this topic has focused mainly on university students' use of social media, less is known about the potential of social media to enhance social capital and to facilitate learning among adolescents. Thus, the current study examines (1) the nature of relationships between high-school students and their teachers on an online social network and their impact on (2) classroom atmosphere and (3) learning processes. To this end, a Grounded Theory approach was adopted to analyze semi-structured interviews with ten youth aged 15–18 and their teachers and with retrospective follow-up observations of actual online teacher-student interactions. The findings showed that interactions on social media strengthened relationships, improved classroom atmosphere, increased active participation in learning activities, and encouraged collaboration and peer support. However, the findings also shed light why some teachers might avoid communication with students via social networking, although it is imperative to increase their presence in social media for the prevention of online "flaming" behaviors.

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Teacher-student relationships; bonding social capital; bridging social capital; social constructivism; social networking; high-schools; classroom atmosphere

1. Introduction

The use of Social Network Sites (SNS) such as WhatsApp, Twitter, Facebook and Instagram, has grown dramatically in the last decade (Asterhan & Rosenberg, 2015; Greenhow & Askari, 2017; Hershkovzt & Forkosh-Baruch, 2017; Manca & Ranieri, 2017) and changed the ways we consume information, produce and share data, communicate, and think. The results of a recent US survey (Smith & Anderson, 2018), indicated that two-thirds of American adults use Facebook, most of whom access Facebook on a daily basis.

At the heart of educational processes are the teacher-student relationships. According to Hershkovzt and Forkosh-Baruch (2017) extending the scope and setting in which teachers and students communicate may affect, in turn, mutual perceptions and relationships. That is, positive teacher-student relationships have been found to facilitate the cognitive development of students (Vandenbroucke et al., 2018), and their social and emotional learning (Poulou, 2017), as well as enhancing students' engagement in the learning process and improving academic achievement (Roorda et al., 2017). Dobransky and Frymier (2004) identified three significant factors that contribute to teacher-

student relationships: student perceptions of having control, mutual trust, and intimacy. Students feel in control when teachers encourage them to take responsibility for the learning process. Trust and intimacy relate to showing empathy and providing support when necessary. Dobransky and Frymier (2004) found that students learn better if their teachers share control, and exhibit higher levels of trust and intimacy.

Despite the rise in popularity of other social media platforms (such as WhatsApp, Twitter and Instagram), Facebook is still viewed by many as a technology-enhanced learning environment that provides both social and educational affordances that can improve learning processes beyond school boundaries and encourage student collaborative learning (Awidi et al., 2019; Manca & Ranieri, 2017). For instance, in the study conducted by Northey et al. (2018) undergraduate students were given the option to choose the SNS platform they preferred for asynchronous learning. The students have chosen Facebook and explained their decision by the easiness of accessing it from devices and operating systems, the convenience of working with a platform they were already experienced in, and its potential to support social learning and collaboration.

Following this approach, the current study focused on the social and educational affordances that Facebook entails in relation to K-12 students, in contrast to the majority of research focused mainly on university students. In order to explore adolescents' social and instructional use of Facebook, we outlined the following purposes: (1) to examine the **nature of relationships** between teachers and students on online social networks and explore reasons why some teachers avoid social networking with students. In addition, we investigated how teacher-student interactions online impact on (2) **classroom atmosphere** and (3) **learning processes**.

1.1. The potential contribution of social networking to teacher-student relationships

SNS platforms, such as Facebook, allow individuals to build their own community by connecting online with people with whom they want to maintain relationships and view their profiles and other information (Boyd & Ellison, 2007; Greenhow & Askari, 2017; Manca & Ranieri, 2017). They connect through a series of networks and tend to share common values with the other members of these networks. Even when learners come from different cultural backgrounds, characterized by different communication styles and behavioral patterns, forming a Facebook group may facilitate the process by which the individuals quickly become a cohesive group.

The increasingly widespread use of SNS in higher education, as means for improving collaboration and communication between students and faculty has been documented in many studies (e.g., Awidi et al., 2019; Northey et al., 2018). As for adolescents, research shows that although K-12 students tend to view Facebook as their private social space, they willingly use it to communicate with teachers and collaborative learning (Greenhow & Askari, 2017; Ha & Shin, 2014; Hershkovzt & Forkosh-Baruch, 2017). Furthermore, shy individuals in general and K-12 students in particular, who often struggle communicating and socializing face-to-face, can be empowered and build relationships more easily via social networks and other online tools (Amichai-Hamburger, 2008; Blau & Caspi, 2010). Consistent with this claim, the results of a nationally representative survey administered among Israeli youth demonstrated that 40% of high school students in Israel claim that teacher-student interactions online contribute to a positive atmosphere in the classroom (Dror et al., 2012). In addition, 55% of the sample reported using social networking frequently ("always" or "often") for informal learning processes as well as increasing personal knowledge.

1.2. Accumulating social capital through social networks

People are continuously involved in developing interpersonal and group relationships, maintaining relationships with others, and accumulating social capital (Ellison et al., 2014). The term "social capital" refers to the total number of sources available to an individual for the creation of social connections. Putnam (2000) distinguished between two types of social capital: *bonding social capital* and

bridging social capital. Bonding social capital refers to “strong bonds” between the individual and close friends and family who, when necessary, can provide emotional support. On the other hand, bridging social capital refers to “weak ties” or “loose connections” with acquaintances. Social capital is associated with a variety of positive outcomes, both at the personal level, such as empowering self-concept and improving well-being, and at the group level, such as creating a better social order (Ellison et al., 2007).

With technological development, social networking has become a powerful source for the accumulation of social capital (Burke et al., 2010). Moreover, by making connections with one another and maintaining these relationships over time, people are able to work together to achieve goals they probably could not achieve by themselves. For example, Burke et al.’s (2010) survey on a large sample of Facebook users ($N = 1193$) demonstrated that individuals who were actively engaged in Facebook reported higher levels of social capital and rated higher levels of well-being. Furthermore, Ranieri et al. (2012) found that generic groups are mainly characterized by bridging social capital, while thematic groups are mostly portrayed by bonding social capital. In Ellison et al.’s study (2014), Facebook users reported higher bridging social capital than non-Facebook users. In that study, although only a small fraction of their Facebook friends was considered “actual” friends (75 out of 300), these “actual” friends correlated with the accumulation of social capital. The authors found that actively engaging in one’s Facebook network – both through responses to friends’ requests and by posting content directly on a friend’s wall – was positively associated with higher levels of bridging social capital.

1.3. Using social networks for learning

The use of social media to facilitate learning stems from Social-Constructivist Theory (Vygotsky, 1980) that all learning processes involve social interactions. In this context, social interactions on Facebook with teachers and peers can improve one’s learning within Zone of Proximal Development (ZPD). For example, Biton et al. (2015) explored the learning opportunities created within a Facebook review project lunched to help the student prepare for the final high-school math exam. Their findings showed that less skilled learners were able to increase their understanding of problem solving in math by receiving peer feedback. Furthermore, the analysis of instructional interactions between teachers and students in that study revealed the contribution of Facebook to peer tutoring, learning through exposure to peer questions, teacher’s solutions, scaffolding, and asking for clarifications.

The potential of using social media, such as Facebook, for improving collaborative learning among students has been reported in many studies (for review see: Manca & Ranieri, 2016). In addition, usage of Facebook for educational purposes is positively associated with academic performance (Lambić, 2016). Moreover, findings indicate that educational social networking improves students’ learning experience and those who partake in groups created on Facebook for educational purposes perform better than students who do not participate (Bowman & Akcaoglu, 2014; Cuesta et al., 2016). Facebook facilitates a sense of community, which encourages students’ active engagement and thus, deepens their learning (Awidi et al., 2019). However, while most research has focused on college and undergraduate students, less is known about the potential of social networks to enhance social capital and deepen learning among adolescents. Thus, the current study was set to examine the nature of relationships between high school students and their teachers on an online social network and the impact of these online connections on the classroom atmosphere and learning processes.

1.4. Research questions

In an effort to investigate online educational interactions in high school settings, the following research questions were explored: (1) How are teacher-student relationships and peer relationships constructed through social networking and what are the reasons to avoid social networking? (2) What

are the implications of teachers-student relationships and peer relationships on social network for classroom atmosphere? (3) How do learning processes take place on social networks and what are the implications of teacher-student relationships via social networks for learning processes and outcomes?

2. Method

A qualitative research paradigm was used to explore the relationships between teachers and students on Facebook and their impact on the learning process and classroom atmosphere.

2.1. Participants

The participants were 10 high-school students, aged 15–18, (4 boys and 6 girls), from three different public high schools in central Israel. All students were of average socioeconomic status, who frequently use technology for social and learning purposes and are Facebook “friends” with at least one of their teachers.

In addition, for triangulation purposes, two of their teachers, who used Facebook on a regular basis to communicate with their students, participated in the study. The teachers worked in different public high schools in central Israel. Both teachers were female and had significant teaching experience (10 and 13 years). Interviews with 12 participants, triangulated with follow-up observations of actual behavior is considered a sufficient sample size in qualitative studies.

The majority of the population in Israel lives in the central region. Additionally, public schools represent the vast majority of schools in the country. Therefore, including participants in the study who learn or teach in different schools in this region contributes to the potential generalization of the findings.

2.2. Research instrument and procedure

The study received approval from the institutional ethics committee. The main research instrument was semi-structured interviews with students, which focused on the use of social networking in an educational context for creating new connections and maintaining relationships with teachers and peers. In addition, the interviews explored the topics that students chose for communication via Facebook with classmates and teachers, privacy issues, and reasons to avoid social networking with their teachers (see student interview questions in Appendix 1A).

Student data was triangulated with information revealed from semi-structured interviews with their teachers. The purpose of the interview with the teachers was to deepen the understanding of how relationships are constructed and maintained via online social networking, the implications that teacher-student relationships on social networks have for the classroom atmosphere, and the reasons why some of their colleagues avoid befriending their students via Facebook. In addition, the interviews focused on the contribution of social networks to learning processes in the classroom and on ways to support learning beyond school boundaries (see teacher interview questions in Appendix 1B).

At the end of the interviews with students and teachers, the participants were asked to show the interviewer the Facebook group with their teacher and classmates/their students or a list of “friends” (in case of direct connections), and provide examples of what they explained during the interview. The aim of these retrospective observations of online teacher-student interactions was to crosscheck the participants reports with actual behavior.

The interviews took place at the participants’ homes and lasted between 60 and 90 min. The interviews were audio-recorded and transcribed. The analysis was conducted bottom-up based on the Grounded Theory approach (Corbin & Strauss, 1990). 30% of the transcriptions were additionally coded by a second rater and inter-rater reliability was high, Cohen’s Kappa $\kappa = .87$.

3. Results

3.1. Constructing teacher-student and peer relationships through social networking

As can be seen in [Figure 1](#), which summarizes the data regarding teacher-student and peer relationships through social networking, three themes emerged from the analysis of the transcripts. The first theme is related to the contribution of social networks to the accumulation of social capital. The second theme reveals students' motivations to connect with their teachers via social media. The third theme illustrates the reasons that lead some teachers and students to avoid such connections.

The interviews reveal that online social networking was a means of increasing social capital:

B., Language Arts teacher:

Nowadays, everyone has a Facebook account, so the first thing they did on the first day of school was to set up a Facebook class group that was separate from their personal profile. I think that within two hours, all the students were connected to the group and the group functioned amazingly for three years. Mainly, it was used for social rather than for educational purposes, e.g. posting, sending messages, updates.

O., 11th grade male student:

At the beginning of last year, there were a number of small cliques in the class because we did not know each other. This changed when we all connected via the class group on Facebook. It connected us, so that everyone was aware of what was going on with others. It was a very empowering experience. It increased friendships and helped me at the beginning of the year. Today it is less essential because we already know each other.

L., 11th grade female student:

Facebook brought us closer together. It is another way to keep in touch outside of school. Students in the class come from different places, so it would have taken us longer to get that close ... Maybe today it is less important, but at the beginning of the school year it brought us together.

H., 12th grade female student:

There was one girl who acted as if she was the class queen. I thought we would never be friends. However, Facebook showed me her other sides. I learned not to draw premature conclusions and not to criticize, but really look beyond the façade.

In addition, the social network enabled shy students to accumulate social capital and express themselves more freely:

N., 11th grade female student said:

On Facebook, it is easier to communicate. There are shy students in the class who initially had a very difficult time opening-up, so they communicated at first via Facebook. There is this boy who has a great sense of humor. At the beginning, it was easier for him to communicate through Facebook, and gradually he opened-up in school as well.

She added:

There are those who respond only on Facebook, who I have never heard speaking in class.

Students showed a willingness to connect with teachers via the online social network – to get to know their teachers better and to establish trust:

N., 11th grade female student:

It's very important to see other sides of the teacher that are not visible in school. In the classroom, I can see only one facet of the teacher, and I can either like it or not. However, if I see other sides that are more human or maternal, my opinion could be more positive. Sometimes, teachers need to show other sides.

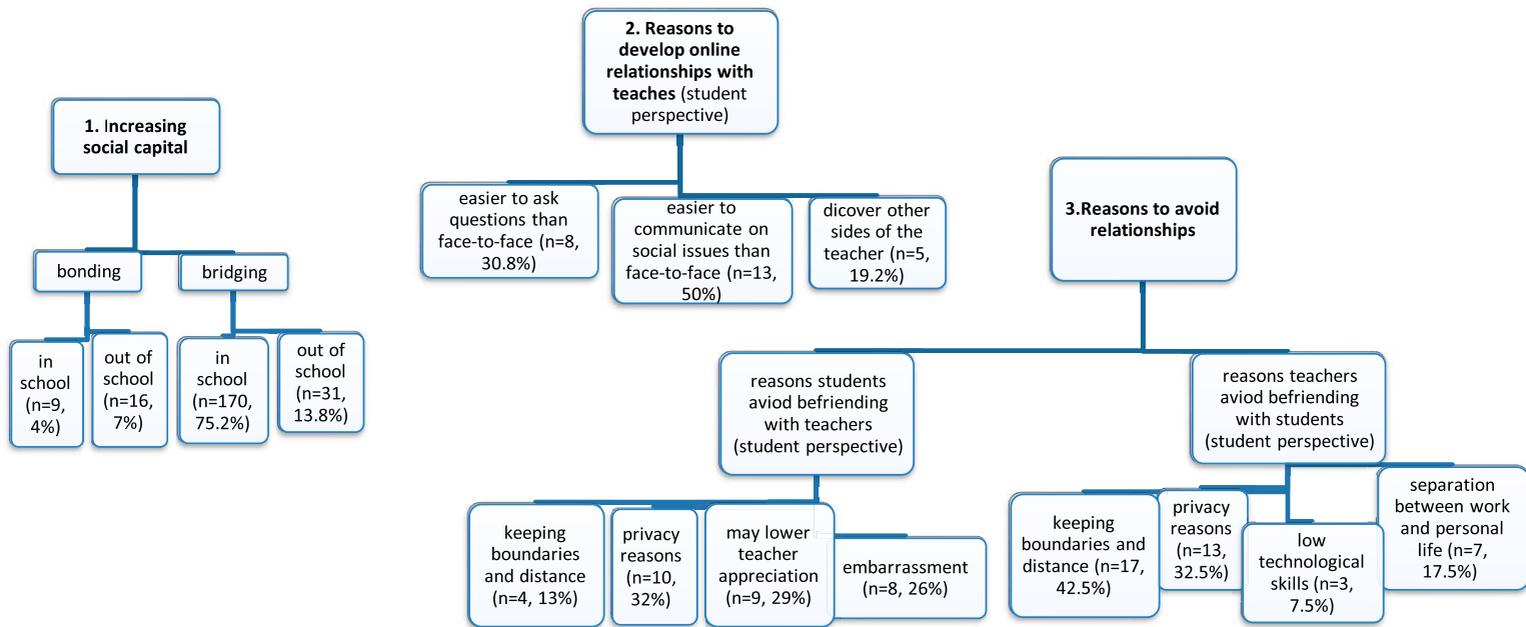


Figure 1. Constructing teacher-student and peer relationships through social network and reasons for avoidance.

3.1.1. The avoidance of social networking between teachers and students

Teachers and students referred to privacy-related concerns as possible reasons why their colleagues might choose to avoid communication with students via social networking:

A., a Social Studies teacher:

I think it stems from privacy concern. There are teachers who really want to keep their personal life private and I respect that very much. I am in favor of full transparency and if there is something private, I will not upload it to Facebook. But mainly, I think teachers avoid it because they are afraid that others might make unpleasant comments, or because they choose not to see what the students are doing. It is quite reasonable to assume that teachers who avoid online social interactions are those who are also less open in the classroom.

L., 12th grade female student:

I think it's more personal. I mean, you can really follow her [the teacher's] life. I think some teachers are not interested in exposing personal things.

Another possible explanation stems from their colleagues' desire to separate between their work and private lives:

N., 11th grade female student:

Teachers usually try to avoid mixing their work with their life outside of school, because it can be very awkward for the teacher if her students know everything about her personal life.

B., a Language Arts teacher:

In my opinion, what makes teachers avoid social networks is their desire to maintain peace of mind and distance from their students. They are afraid of either interrupting their privacy or continuing to work at home, which might interfere with their personal lives. Even though we explained that their privacy will not be disturbed if they communicate in a closed Facebook group, they still did not approve and preferred not to participate ... It is ultimately a personal choice, and no one can make teachers change their communication style.

According to some students, however, teachers who do not use social media are those who are more conservative and less involved in using technology:

G., 10th grade male student:

A lot of teachers are not connected to Facebook ... Many of them have not even opened an account on Facebook.

T., 12th grade male student:

You can no longer ignore the existence of Facebook. The problem with the older generation of teachers is that they just do not relate to it. If the teacher has taught for 20 years in a certain way, no one will be able to change his/her way of thinking. They're just old-fashioned.

Some students avoid befriending teachers because they do not believe that the relationship could be authentic:

H., 12th grade female student:

They will always be our teachers and we will always be their students. There is a separation. I mean, once you graduate, you move on. It's not the kind of relationship that will last.

Some students raised privacy-related reasons to explain why they might avoid befriending teachers on Facebook:

N., 11th grade female student:

Facebook involvement can be problematic, because there are things we would not want our teacher to know ... This can create an uncomfortable situation. You might reveal personal information and the teacher might not, so she would know more about you than you know about her.

T., 12th grade male student:

Just as the teacher would not want everyone to know what happens in his/her personal life and there is distance between us, a student would not want the teachers to know about the stupid things he might do.

Some students even raised concerns about the possibility of an unintended audience, in case teachers might inform their parents about private content that they post:

S., 11th grade female student:

There are children who do not filter what they post, but they do not want certain people to see it. For this reason, they do not want their teacher to enter their private profile and maybe tell their parents.

L., 11th grade female student:

There is content on Facebook that I prefer my teachers not to see. I do not want it to be revealed to my parents. There are things you keep to yourself, that only you and your friends can see ... In the virtual world you talk to friends and post content that you would not normally do or say. In the real world you act differently.

3.2. The implications of teacher-student relationships via social networks for classroom atmosphere

In terms of the implications for the classroom atmosphere (Figure 2), both teachers and students described the contribution of social media to open communication and emotional support, and thus, to strengthened relationships. In addition, teachers perceived social media as a means of promoting proper communication to prevent behavior problems.

Teachers and students described the contribution of social media to their relationships:

A., a Social Studies teacher:

The whole class is here [on Facebook], without exception, and it's amazing. A few hours after the beginning of the year, everyone was already connected to the Facebook group. It was the fastest thing they ever did in relation to school. They were so enthusiastic! It reflects their desire to be part of the new group, to feel together and get to know each other, and to follow one another's life.

L., 11th grade female student:

We are a very problematic class and most of the teachers have difficulty teaching us. She [the History teacher] is the only teacher who likes our class. She never gave us troubles. If you come to her with a question, she always helps. We would like to open a group with her on Facebook, it would definitely add to our relationships.

A., a Social Studies teacher:

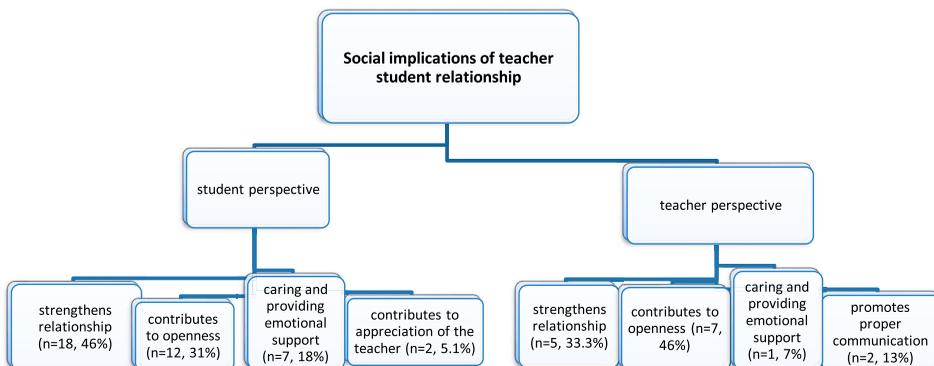


Figure 2. The implications of teacher-student relationships via social networks for classroom atmosphere.

I check Facebook at least once a day. I quickly check if anyone has a birthday or if there is an important message. When there is a new message, it alerts me on my phone. It's how we interact with each other. It also allows further communication with former students and teachers who have left the school. I can see what they are doing and occasionally ask them how they are. I like staying in touch.

In addition, teachers reported that social media contributed to an openness where discourse around personal values can take place:

A., a Social Studies teacher:

In my opinion, aside from administrative purposes, Facebook provides an opportunity to develop the students' personal values, to comment on issues that may concern them, and to address problematic behavior. Students know that they can use Facebook for these matters, and I think they do it very nicely.

In terms of caring and providing emotional support, online social media provide teachers with the opportunity to be more attentive towards their students:

A., a Social Studies teacher:

Sometimes I also notice something which I would not necessarily have noticed in the classroom. It gives me the opportunity to monitor and be aware of things that happen to a student, which I might not have been able to identify otherwise. After all, homeroom teachers are expected to look after their students.

Facebook also provides students with the opportunity to demonstrate care and concern towards the school-staff, which can be very empowering:

A., a Social Studies teacher:

Last year's incident, with the dismissal of the principal, proves that students can use Facebook in a very constructive manner. After the principal was dismissed, the mayor and the students opened a Facebook group to discuss the matter. At first, the students, who were all in favor of the principal and wanted the mayor to cancel the dismissal, were very resentful. Later, when they realized that the dismissal could not be undone, they decided to create an event that would allow them to say goodbye to the principal and wish him success. They wrote about a hundred touching farewells that are still on Facebook. At the end of the year, we prepared a book with those farewells as a gift to the principal. It was very moving. This is a wonderful example of using Facebook.

The presence of teachers in Facebook prevented online behavior problems:

A., a Social Studies teacher:

I am well aware that students can also use Facebook for slander and other bad things, but precisely because it is so open to everyone, and others can see and criticize, they will not write anything bad about someone ... I think there were few incidents that I had to intervene in, and they immediately apologized and erased [the post]. On the contrary, when the teacher is there, they fear that the teacher will have to respond, because it is part of our duty. Even in the classroom, negative comments are sometimes made, and the teacher must intervene. The same on Facebook, so I comment, if needed.

3.3. The implications of teacher-student relationships via social networks for learning processes and outcomes

In terms of the implications for learning (Figure 3), social media provided a platform for addressing administrative issues (sending instructions and reminders), facilitating learning processes, and sharing learning materials. Teachers also used social media to extend the learning experience beyond the boundaries of the school.

Teachers use social media to focus on teaching rather than administration:

A., a teacher of Social Studies:

Facebook helps me a lot. Without it, half the lesson would be wasted on providing information and explanations. Now everything is available there, and students do not need to write anything in the classroom. It's an amazing tool, I think those who do not use it simply lose out.

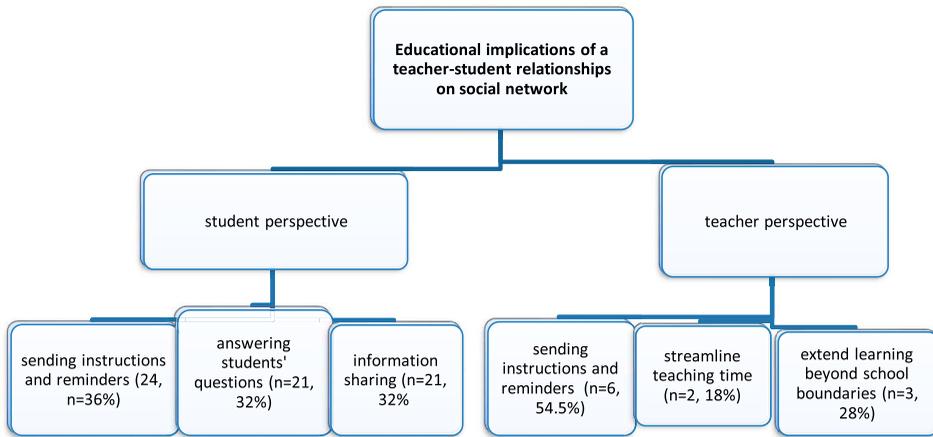


Figure 3. The implications of teacher-student relationships via social networks for learning processes and outcomes.

Social media allows learning support from teachers and peers:

G., 10th grade male student:

We have a Facebook group that the math teacher opened and participated in. Sometimes he would answer questions about homework, sometimes he would make us answer ourselves, and sometimes he would just post jokes.

G., 10th grade male student:

It would be very complicated to get help on assignments without a Facebook group. Otherwise, I would need to ask someone by texting. If s/he could not help, then I would need to ask someone else, and so on. In contrast, as a member of the class Facebook group, I could just post a question and then even classmates whose phone number I don't have, could help. There is also the issue of making the teacher notice. If I answered many questions, the teacher might be impressed. I think it could help in terms of getting a better grade.

This is especially important for the more introverted students as social media provide a means to overcome learning barriers:

A., 11th grade male student:

I think it's easier for shy people to write than to communicate face-to-face. Some people are afraid of what the teacher might say, so it's easier to write. It is easier for the shy folks to send a private message on Facebook rather than to speak in front of the class.

N., 11th grade female student:

In the classroom, I sometimes fear that the teacher might get angry if I did not understand something she said. In such cases, I prefer not to ask her in class but to write to her on Facebook. She always answers on Facebook and if I still do not understand then she has no problem explaining it further in class.

L., 12th grade female student:

If the teacher taught a subject in the classroom and there is a student who was too embarrassed to ask in class, then he could ask [on Facebook]. If the teacher hands out an assignment and you do not understand a question, it is easier to ask via Facebook.

Strengthening relationships with teachers facilitated learning processes:

T., 10th grade female student:

If teachers talk to me in private on Facebook, then it is easier for me to respect and listen to them in class. I think that if I respect them more, it is easier for me to understand what they teach. It can really help.

Moreover, openness and exposure endorsed learning:

A., a Social Studies teacher:

There is a lot of openness and exposure on Facebook, but I do not think it caused disciplinary problems or lowered academic achievement. On the contrary, a grade point average of 88.5 [out of 100] in Social Studies indicates otherwise. It's a fantastic average, which shows that social networking actually helped. More than 20 students achieved a score of 95 or more, it's quite remarkable!

In addition, when teachers invested time in sharing educational materials and answering students' questions, the students perceived that as a demonstration of care:

S., 11th grade female student:

There is a teacher who posts summaries and comments to help us, even though he is not compensated for it. From what I have heard, I know it helped many students. It shows that he is investing a lot of efforts. Personally, I appreciate it very much because he is willing to go an extra mile for us.

An additional promising way of learning reported in this study was peer teaching via the social network *without* teacher mediation.

B., a Language Arts teacher:

Nowadays, they enter Facebook 30–40 times a day, they scan and upload materials, they respond to each other and help each other, and it significantly contributes to the learning process.

Students also support each other and share learning materials.

T., 10th grade female student:

If you were studying for a test and you did not understand something, you could ask a question on Facebook and someone from our group would help you. In addition, if you missed a lesson you could ask someone to send you a summary. This is very helpful.

Social media allowed teachers to extend the learning process beyond school boundaries:

A., a teacher of Social Studies:

I encouraged my students to use the social network for their last assignment in Social Studies, on the subject of gay marriage. They opened a Facebook page and started to get responses. They also had to interview people from the community, so via Facebook they contacted a member of the LGBT (Lesbian, Gay, Bisexual, and Transgender) National Association, who was happy to volunteer for an interview. In addition, a lawyer from the LGBT community, whom they also contacted via Facebook, agreed to meet them and she explained the community's legal rights. They learned a lot from this experience.

4. Discussion

This study highlights the potential benefits of using social media as a platform for learning and learning-related interactions. Consistent with previous research (Ellison et al., 2007, 2014; Manca & Ranieri, 2016; Phua et al., 2017), both students and teachers described two major benefits of social media as a platform for (a) creating and maintaining bridging and bonding social capital, and (b) enhancing learning through interpersonal interaction in terms of the Social-Constructivist Theory (Vygotsky, 1980). In terms of triangulation, it is important to note that there was no discrepancy between the interviews and retrospective observations. On the contrary, the interviewees showed their Facebook group to the interviewer in order to substantiate their statements. They provided examples of discussions, posts, shared content, etc. The observations were completely consistent with the descriptions offered during the interviews with teachers and students.

4.1. Creating and maintaining social capital through social networks

This study examined the nature of relationships between teachers and students via an online social network in terms of bridging and bonding social capital (Putnam, 2000). The findings support the claim raised by previous studies (Ellison et al., 2007, 2014; Kuznetcova et al., 2019; Phua et al., 2017) that through Facebook students are better acquainted with their teachers and peers and thus, weak ties of *bridging social capital* gradually become strong ties (i.e. *bonding social capital*). The teachers who participated in this study described the enthusiasm that the students demonstrated in relation to creating a class group on Facebook: “it was the fastest thing they ever did in relation to school”. From the teacher’s point of view, this enthusiasm seemed to reflect the students’ desire for a sense of group belonging and connection to their peers. In the same vein, the students described how the social network helped them to get acquainted with each other more rapidly at the beginning of the school year. In the case of students in regional schools who come from a variety of places, social networking helped them to maintain relationships with remote friends after school.

Overall, the students were interested in knowing their teachers more deeply and feeling closer to them. Such connections were established mostly by creating a closed class group that the teacher manages, while in other cases, students and teachers were directly connected as Facebook “friends”. Consistently with Ellison et al. (2014), the informal nature of communication on social media strengthened the relationships between teachers and students and among peers, and through this, enhances mutual trust between them. Both students and teachers reported that connections via social network allowed exposure to the background of others, beyond what is expressed in school. As the students became more familiar with the personal background of their teachers, their mutual trust grew stronger and they developed closer relationships. Interestingly, the students reported their interest in opening a class group on Facebook for strengthening their relationships with a teacher with whom they had good offline communication in the classroom (“it would definitely add to our relationship”). In addition, the social network provided teachers and students with the opportunities to maintain relationships with former students and peers.

4.1.1. The “poor get richer” effect

The findings indicated that shy students, whose voices are usually not heard in the classroom, prefer the use of the social network rather than face-to-face communication, to communicate with classmates and teachers. Students reported that there are those who never spoke in the classroom, but were able to sound their “voices” on Facebook. This phenomenon of online empowerment is known in the literature as “the poor get richer” effect (Amichai-Hamburger, 2008; Blau & Caspi, 2010; Weiser et al., 2018). Furthermore, students spoke about shy students who had a very difficult time communicating face-to-face with the other students. Facebook provides these students with the opportunity to express themselves and compensate for their fear of communicating in person. Apparently, some of these students, who initially struggled socializing with new classmates, gradually became acquainted with peers, built confidence online, and eventually were able to communicate with their classmates face-to-face. These results are consistent with Burke et al. (2011), who found that even passive consumption of posts, without writing, helped those who were uncomfortable communicating in-person and led to gains in bridging social capital.

4.1.2. Reasons against social networking between teachers and students

Teachers and students raised several reasons why educators might avoid communication with students via social networking. Consistent with Forkosh-Baruch and Hershkovitz (2014), these included privacy-related concerns, such as the disclosure of personal information, as well as the willingness to separate their work from their personal lives and maintain a distance between themselves and their students. Moreover, some of the students perceived teachers who do not use social media as more conservative and less familiar with technology.

Consistent with Ha and Shin (2014) who argued that most adolescents perceive social media as casual and peer-based social spaces, where they can present a relaxed or intimate image of themselves. Some students raised concerns that teachers might reveal inappropriate content they posted on Facebook to their parents. This corresponds with Barnes (2006) who described a “privacy paradox” in a sense that there is often a discrepancy between adolescents’ desire to protect privacy and their online behaviors (Acquisti & Gross, 2006). In terms of privacy, Ellison & Boyd, (2013) cautioned that, unlike the face-to-face context in which the level of exposure is controlled and the audience is present, private content, accessed by a limited audience, can be misinterpreted as non-private and exposed to a third party. This may explain why students prefer to avoid befriending teachers online, although most of them understood that membership in the closed group would not enable access to their personal profile.

4.1.3. The “dark side” of social networking and its prevention

Although the research literature warns about the appearance of “flaming” behaviors in online environments (i.e. the hostile expression of strong emotions and feelings; Lea et al., 1992; Spears et al., 2011), our findings suggest that these behaviors are less common in groups of students on social networks that include teachers. On the contrary, it seems that the presence of teachers plays a moderating role in suppressing flaming behaviors, and therefore we recommend that teachers become a part of such groups.

However, the interviews indicated that some teachers choose to refrain from interacting with their students on social networks. Given the fact that cyberbullying becomes a serious problem in educational systems (Whittaker & Kowalski, 2015), it is important to encourage teachers to increase their presence in social media as a preventive measure. The ease in which hostile expression of strong emotions and feelings in digital environments is related to the online disinhibition effect as a result of anonymity (Suler, 2005). A more recent study conducted in the era of online social networking (Lapidot-Lefler & Barak, 2012) differentiated the effect of anonymity from invisibility and lack of eye contact, in relation to what the authors called “toxic online disinhibition”. They established that invisibility, and especially lack of eye contact, contribute to toxic behavior in digital environments even if the participants are not anonymous, as in the case of students connecting through social networks with their peers.

Although social networks might be used to increase negative online behavior, it can also be used for its prevention and treatment. Blau and Barak (2012) found that people are more open to discuss sensitive topics through online writing rather than face-to-face. Therefore, it is reasonable to assume that students may feel more comfortable confiding in the teacher and reporting cases of flaming behavior or cyberbullying through social networks. In addition, social networks can be used as a platform for discussions during educational interventions aiming to improve the classroom atmosphere and prevent expressions of toxic disinhibition.

4.2. The benefits of using social networks for learning

The findings from the current study lend support to researchers that challenge the hierarchical nature of traditional classroom models by highlighting effective uses of social networking in support of in- and out-of-classroom learning and educational interactions. In terms of Social-Constructivist Learning Theory (Vygotsky, 1980), social media provided a new means of extending the process of learning and construction of knowledge beyond school boundaries. Through social media, some students in our study contacted people from the LGBT community who agreed to be interviewed, and thus contributed their perspective to the students’ assignment; an opportunity that would not have been possible without social media. Moreover, consistently with Kuznetcova et al. (2019), it seems that social media not only expanded learning beyond school boundaries, it also encouraged students to take control and responsibility over their own learning. The perception of social media as a complementary asynchronous resource corresponds with the blended learning approach, in which

synchronous and/or asynchronous components are used in combination with face-to-face teaching to create group cohesiveness and cost-effective learning opportunities (Milne, 2006). In a recent study among university students, Northey et al. (2018) found that blending learning including face-to-face lessons in combination with out-of-class asynchronous learning via Facebook, had a positive influence on both academic achievement and students' levels of perceived engagement.

An additional form of learning reported in this study was spontaneous peer teaching and learning via the social network, sometimes without teacher mediation. In these study groups, students asked questions, helped each other solve problems, shared summaries for exams, uploaded presentations, and other learning materials. Our findings correspond with previous results demonstrating that social media encourages support and collaboration (Whittaker et al., 2014), and facilitates a sense of community, which contributes to academic performance (Awidi et al., 2019). Consistent with Bosch (2009), teachers in this study used Facebook to streamline class time more efficiently and to stay focused on the content, rather than on resolving administrative issues.

Expanding on Amichai-Hamburger's (2008) findings with regard to shy students, unique characteristics of interactions via social networks, such as invisibility and asynchronicity (Blau & Barak, 2012), have important implications in terms of students' learning. The interviews indicated that shy students tend to regard the social network as a safe place to communicate with teachers and classmates. This corresponds with previous study (Al-Rahmi et al., 2015) which reported that Facebook can be used as an extension of classroom interaction to attract and encourage introverted students to participate. Indeed, our interviews have shown that shy students avoid asking their teachers questions in front of the class, rather prefer the use of social networking to obtain learning support.

4.3. Limitations and future directions

This study triangulates the data of students and teachers from different schools and crosschecks interviews of students with the perspectives of teachers. Importantly, self-report data from the interviews was crosschecked with retrospective observations of actual participants' behavior with their teachers and classmates or with their students. However, the main limitation of this study remains its relatively small sample. Future studies may involve a wider sample of students and teachers. In addition, it would be interesting to conduct a future study with a comparative sample in culturally and/or geographically different contexts.

Furthermore, this study was conducted within a qualitative research paradigm. Combining qualitative and quantitative paradigms, for example, by adding social network analysis, which could be not conducted in this study because of ethical considerations, can contribute to a deeper and more comprehensive understanding regarding the nature of participants' online interactions and contribution of social networking to learning and in-class teacher-student and peer relationships.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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Appendices

Appendix 1A: question protocol for student interviews

- (1) Please describe the way you use social networks (which network, how many years have you used this network, how often do you access this network and from which device?)
- (2) Who are your “friends” on social networks? How many of them would you define as close friends and how many as acquaintances?
- (3) How do you keep in touch with your classmates? Are you a part of any learning groups on a social network – learning groups opened by students or by teachers?
- (4) In your opinion, how does maintaining contact with your classmates through a social network impact your relationships in the classroom?
- (5) How do you use social networks to maintain contact with teachers – your homeroom teacher, subject-matter teachers? How do they connect with students – as friends or through a closed group? How much information do you share with them – can all members of your network see the same information, or do you manage different levels of privacy for different friends and classmates/teachers?
- (6) Are there topics which it is easier to communicate with the teacher or with other students about over the network rather than in the classroom or vice versa? Please provide examples.
- (7) How do you think communicating with teachers on the internet influences your attitude toward these teachers? Do you think that social network communication interferes/facilitates classroom interactions with these teachers?
- (8) How does this affect the classroom atmosphere?
- (9) How does this affect learning processes in the classroom?
- (10) In what way would you recommend, if at all, conducting teacher-student interactions via social networks for learning purposes? Why do you think some students prefer teachers not to be their social network friends? Why do you think some teachers are not in touch with students over the network?

Follow-up observation: Please show me the Facebook group with your teacher and classmates and provide examples of what you explained.

Appendix 1B: question protocol for teacher interviews

- (1) Please describe the way you use social networks (which network, how many years have you used this network, how often do you access this network and from which device?)
- (2) Who are your “friends” on social networks? How many of them would you define as close friends and how many as acquaintances?
- (3) How do you keep in touch with your students? Are you a part of any learning groups on a social network – learning groups opened by students or by you?
- (4) In your opinion, how does maintaining contact with your students through a social network impact your relationships in the classroom?
- (5) How do you use a social network to maintain contact with your students? How do they connect with you – as friends or through a closed group? How much information do you share with them – can all members of your network see the same information, or do you manage different levels of privacy for different friends and students?
- (6) Are there topics which it is easier to communicate with the students about over the network rather than in the classroom or vice versa? Please provide examples.
- (7) How do you think communicating with students on the internet influences your attitude towards them? Do you think that social network communication interferes/facilitates classroom interactions with students?
- (8) How does this affect the classroom atmosphere?
- (9) How does this affect the learning processes in the classroom?
- (10) In what way, if at all, would you recommend conducting teacher-student interactions via social networks for learning purposes? Why do you think some teachers avoid social networking with students?

Follow-up observation: Please show me the Facebook group with your students and provide examples of what you explained.