Exploring teachers’ knowledge of students’ friend networks: what do they know and how do they use it for instruction

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Abstract
Purpose – The study seeks to understand what teachers know about students’ friend networks and how they use that information for instruction.
Design/methodology/approach – This qualitative study relied on interviews and sociograms that teachers drew of students’ friend networks.
Findings – Our data suggest that teachers’ awareness of their students’ friend networks varies by their experience and their exposure to students. Also, their use of this information for instruction coalesces around dimensions of grouping and social support.
Research limitations/implications – This study took place at one school. To more deeply understand what teachers perceive about their students’ friend networks and how they use that information for instruction, more studies could be done with teachers in more schools.
Practical implications – Implications might suggest developing teachers’ social competence to support their students’ learning and development.
Originality/value – While studies cited in this paper have explored teachers’ knowledge of students’ social networks, this study builds on this work by exploring how that information can be useful for instruction. In addition, this study explores the use of teachers drawing sociograms as representations of what they know about students’ friend networks.

Keywords Teacher knowledge, Data-driven instruction, Students’ social networks

Teaching is a complex, knowledge-based occupation requiring a variety of skills and knowledge (Grant, 2008; McDiarmid and Clevenger-Bright, 2008; Monte-Sano and Budano, 2013; Gess-Newsome et al., 2019). Teaching draws on a multiplicity of cognitive, affective and social aspects (Turner and Rowland, 2011; Craig, 2018). In drawing on these various aspects as they teach in the classroom, teachers develop practical knowledge, which is “the knowledge teachers have of classroom situations, the practical dilemmas they face in carrying out purposeful action in these settings …” (Carter, 1990, p. 299). One aspect of this knowledge is the social milieu within a classroom.

Practically speaking, inside every classroom, instruction requires to some extent creating explicit groupings of students. They may group by gender, performance or how well-behaved...
the students are. This grouping goes beyond the spatial layout of the classroom. Teachers form groups of students for long-term projects, short-term assignments, discussions or peer assessments. At least tacitly, educators rely on students' social network information to carry out their day-to-day work.

In this qualitative exploratory study of ninth- and tenth-grade teachers, we explore the extent to which teachers are aware of students' social networks. In addition, if they are aware of their students' social networks, we look at how they claim to use this information in their work as a teacher. We specifically explore differences in teachers’ awareness and use of information of students' social networks based on dimensions such as content area teachers versus elective teachers, or special education teachers versus mainstream teachers. The dimensions reveal differential ways that teachers use this information for instruction, or more generally, supporting students' learning and development. These dimensions have implications for teaching, both face-to-face as well as online.

Conceptual framework
The conceptual framework with which to explore teachers' knowledge of student social networks rests on the notion that teachers possess knowledge in practice (e.g. Cochran-Smith and Lytle, 1999). This conceptual framework is also based on two general conjectures.

1. Teachers have an awareness of their students' social networks
2. Teachers instructionally use information of their students' social networks

Teachers’ knowledge in practice
What teachers know and how they express their knowledge are foundational to student learning. In general, teaching is a complex, interdependent practice consisting of the teacher, the content and the students (Cohen et al., 2003). Knowledge in practice thus refers to what teachers know as a result of their experiences teaching in the complex, complicated and evolving classroom (Cochran-Smith and Lytle, 1999).

To characterize instruction, a common model consists of this instructional triangle to depict the relationship between the teacher, the student and the content or curriculum (e.g. Ball and Cohen, 1999) (see Figure 1). Sometimes this is called the instructional core (City et al., 2010). Ball and Cohen (1999) suggest that instruction happens through the interactions of teachers and students around the content. However, this model actually rarely takes place. This is because the teacher is rarely interacting with only one student at a time.

Figure 2 shows Lampert’s (2001) elaboration of the instructional triangle. Multiple students are represented in order to reflect the classroom reality. The teacher’s interactions with students and content are multiple and contingent on one another. Key to this teaching model is that the knowledge of instruction and knowledge of one’s subject matter alone are insufficient for the work of teaching. This interplay of knowledge sources in instruction is an essential aspect of the essence of the teaching craft.

The integration of teachers’ knowledge of students’ relationships with the content of instruction is a form of “practitioner knowledge.” (Hiebert et al., 2002). Like craft knowledge and “working knowledge” (Kennedy, 2002), this form of teacher knowledge is detailed, concrete and essential to practice (Wardrip and Shapiro, 2016; Shapiro and Wardrip, 2019; Wardrip and Herman, 2020). An example of this integration is knowledge of the relationships of students. Within a classroom, there are multiple settings for learning: seat work, group work and whole class activity (Hall and Rubin, 1998). Each of these settings can carry with them greater or lesser potential for motivation, effort and even intellectual content. Lampert (2001) writes, “By structuring relationships among students to support appropriate learning,
a teacher in a classroom can add to her practical resources . . . Because relationships among students in classrooms provide an arena in which all teachers can work to solve problems of practice, they need to be represented in a model of the work of teaching.” (p. 425).

*Teachers have an awareness of their students’ friend networks*

While studies in business settings tell us how awareness of social networks may be an asset to individuals or groups (e.g. Cross and Thomas, 2011), there has been some research on teachers’ awareness of students’ social networks. In fact, teachers’ knowledge of students’ social networks has somewhat of a long history. A typical way of investigating a teacher’s knowledge or awareness of students’ social networks has been through their agreement with student reports. For example, Bonney (1947) sought to examine the accuracy of teachers’ perceptions of student friendships. Gronlund (1955, 1957) aimed to access the teachers’ judgment of students’ sociometric status, which is how popular a particular student is with respect to her classmates. Gronlund called this “classroom sociometry” (1959).

Research investigating the level of agreement between teacher and student perceptions of student social networks has resurfaced in recent years. While not looking at popularity, this research has examined teachers’ ability to identify student groups (Gest, 2006; Pearl *et al*., 2007), teachers’ ability to perceive friendships of students (Pittinsky and Carolan, 2008) and
the classroom characteristics associated with teacher–student agreement (Neal et al., 2011). Not surprisingly, these studies generally find some teachers better at achieving agreement with students with factors like larger class sizes or higher levels of aggressive classroom behavior contributing to lower levels of agreement.

Teachers’ instructional use of information of their students’ friend networks
Research has noted the importance of teachers using student data to inform their instructional decisions (Mandinach and Jimerson, 2016). And these data can go beyond the test data that are made available to teachers. In fact, teachers often integrate what they know about students and what they observe to make sense of test data (Wardrip and Herman, 2018).

Many of the previously noted studies on teachers’ knowledge of student social networks did not directly focus on the instructional consequences of that knowledge. However, some did note the potential of this knowledge. For example, Bonney (1947) claimed that teachers’ perceptions of student networks are key to effective teaching. In addition to the instructional importance of this awareness of students’ social networks, Pearl et al. (2007) suggested that student network information could aid in establishing a safe classroom environment and responding to bullying.

In general, these studies suggest that a teacher who possesses more awareness of the student social networks “can serve as an ‘invisible hand’ to foster classroom social contexts that enhance learning and cooperation.” (Pearl et al., 2007, p. 27). Hughes and Chen found that teacher–student relationship quality influenced a student’s social reputation of being a good student (2011). Therefore, it noted that building relationships with students could impact the perceptions of status in the classroom. Moreover, Luckner and Pianta observed that classroom management and organization as well as displays of emotional support, facilitated by teachers, were associated with observations of elevated positive peer interaction (2011). Finally, Hamm et al. (2011) compared teachers’ and students’ perceptions of students’ social groups and looked for how this comparison related to students’ sense of acceptance and belonging in the school. These studies establish, to some extent, that teachers possess an “attunement” to their students’ social relationships (Hoffman et al., 2015). Similar findings have been found by other studies as well (e.g. Pearl et al., 2007; Marucci et al., 2018). However, these studies do not necessarily show how this attunement is enacted in practice.

Methods
Thus far, we have laid a rationale and conceptualized instruction in a way that suggests that an exploration of teachers’ knowledge of students’ friendship networks can be important for practice. The study we describe explores two broad questions:

1. What do teachers think they know about student friendship networks?

2. How do they use that information, if at all, for their work as teachers?

Research site
This study was conducted in one school in an urban, mid-Atlantic city in the United States. The public school maintains a unique partnership with a local university. Faculty from the partnering university regularly offer professional development, facilitate teacher meetings and provide instructional assistance in an attempt to collectively improve the learning environment for all students and teachers. The school serves middle and high school students. Ninety-nine percent of the students are African-American and 72% are eligible for free or reduced lunch.
Participants
Participants were chosen using a purposive sampling strategy across two grades of a high school. We aimed to interview teachers with varied experience as well as teachers of both content-area classes and electives. The sample consisted of 12 teachers. This sample of teachers was chosen based on the researchers’ prior knowledge of the teachers and their working relationship. The teaching experience of those selected varied from one to ten years. In order to explore a broad space of knowledge potentially shared by the teachers, careful attention was placed on selecting participants to represent the core and elective subject areas. In addition, care was taken to interview teachers who were in their second year at the school as well as teachers who were in their first year. All of the participants’ names have been replaced with pseudonyms as well as the names of the students about whom the teachers talk.

Data collection
In this study, there are three sources of data. First, 12 semi-structured interviews (Rubin and Rubin, 2005) were conducted with the participating teachers. The researcher guided the interviews to maintain the focus on student friend networks, but the participants were encouraged to discuss other experiences such as other information they have learned about students. Specifically, the interviews queried the participants’ knowledge of five or six students’ networks. The students discussed in the interview were chosen at random from each teacher’s roster of students. Students were chosen randomly to uncover the participants’ knowledge of a variety of students, not just those they knew well. The interviews were audiotaped and conducted by one of the researchers. The interviews, on average, took 50 min to complete.

A second source of data was participant-drawn sociograms. A sociogram is a representation of a social network consisting of nodes, which represent people and lines connecting the nodes, which signify a relationship. Teachers were shown an example of a sociogram prior to the interview, and provided with an explanation about sociograms. As the participating teacher answered the questions about one of the randomly chosen students, each drew a sociogram of the student’s network on a blank sheet of paper. In Figures 3 and 4, we can see example sociograms.

Upon drawing the student’s social network, each participating teacher drew connections among the nodes in the student’s network to connect the center student’s friends amongst each other. It is important to note that, although some teachers expressed that their perspective of students was limited to the classroom, a small sociogram does not necessarily indicate limited knowledge on the teacher’s part. While this might be the case, it also may be that the student has a small group of friends.

The sociograms served multiple purposes. For example, they served to uncover participants’ beliefs (Kolb and Fishman, 2006). As some teachers listed the names of students, they laughed or made comments about the type of person the particular student was. Moreover, as teachers talked about students, they pointed at their drawings, followed the lines with their fingers and some even used different colors to illustrate different groups. In this way, the sociograms served as an elicitation device. Furthermore, the sociograms served as a tangible artifact to be analyzed.

A third source of data was field notes from the interviews. These field notes aimed at capturing ongoing interpretations of the data-gathering process (Emerson et al., 1995) as well as beginning the course of analysis. This analysis was sensitive to participants’ meaning-making by inferring what they did with the data rather than primarily relying on what they said about students and the data.

In previous research related to teachers’ perceptions of social networks, the empirical question tested had to do with the extent to which teachers’ and students’ reports of students’ social networks agreed. Here, we take perceptions alone because we are interested in the use
of this information for instruction. For example, Takei et al. (1998) studied how teachers’ perceptions of student behavior, not their actual behavior, played a role in the teachers’ grading practices (cited in Pittinsky and Carolan, 2008). The perceptions that teachers possess ultimately have consequences on how they carry out instructions.

**Data analysis**

First, one of the researchers transcribed the interviews with teachers verbatim. The transcription process served as an initial step in the analytic process (Bird, 2005). We coded the transcripts for the teachers’ awareness of the students’ friendship networks. Following Lampert’s assertion of students serving as a social resource for instruction, we devised a rudimentary coding scheme for teachers’ comments that framed the social networks as a resource or not. For example, a teacher who used what they knew about student social relations to strategically place a high-achieving student with a low-achieving student may view the social network as a resource. On the contrary, a teacher may view student social networks as inherently negative because they have the potential to disrupt class through off-topic discussions or off-task behavior. Although awareness of social networks in both cases is a resource in that it provides information that a teacher sees suitable for action, the role these social connections played differed for teacher. It is also worth noting that a single teacher may have carried both views of social relations depending on the students they were discussing.

New codes were added to establish the particularities of teachers’ use of their awareness of students’ social networks. These codes were drawn from the research literature on adolescent social networks. In particular, this included methods to facilitate desired social influence and offer social support. In addition, emergent themes were coded to explore the research questions by tracing the use of how the teachers identified the students’ social networks, and
how they used this information for instructional purposes (Bogdan and Biklen, 1992). For example, these codes highlighted the specific situations in which teachers were using grouping strategies for students. One teacher spoke of students having good days and bad days and, in her view, recognizing what kind of day the students were having at the beginning of the period was crucial to dictating her grouping strategies.

Finally, analytic memos were written on an ongoing basis in order to identify patterns and categories in the data and the salience of the initial questions (Marshall and Rossman, 2006), such as the coalescence of the teachers’ interpretations of the student friendship networks based on their roles in the school. Analytic memos also allowed us to cut across the data sources to inform our interpretations.

The analyses were checked with some of the participants through debriefing meetings (Lincoln et al., 1985). We attempted to debrief with all of the teachers, but for various reasons, we were able to meet with seven of them. The purpose of the member checking was to establish internal validity with respect to our inferences. This was important to check how reasonable our interpretations were. This was not a formalized procedure. Instead, one of the researchers shared ongoing interpretations of what the teachers said either in one meeting or several brief meetings to accommodate the schedule of the teachers.

Results

*What do teachers think they know about student social networks?*

All of the participants claimed to have and offered evidence of knowledge of their students’ social networks. They drew sociograms for each randomly chosen student and no respondent claimed they could not accurately describe, at least part of, a student’s social network or lack thereof. All of the teachers claimed that this information was useful to them for teaching. All of the teachers claimed that they knew something about particular students’ social networks. We can see some variety in their knowledge, as one might expect.

In Figure 5, we see that teachers varied in the number of students they listed for each sociogram. The teachers in red (2, 7, 8, 9, 10, 11 and 12) are the content area or core teachers and in blue are the elective course teachers. The data suggest that the core teachers are able to give a broader picture of a student’s social network than the elective teacher. There is one exception. Teacher number two fits in with the pattern of elective teachers. This may be

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**Figure 5.** Mean number of students listed by teachers in each sociogram

*Source(s):* Figure by authors
attributed to the fact that she is a new teacher. As a new teacher at the school, she did not have
the benefit of looping like other teachers. For example, teachers 11 and 12 are teachers who
have looped with students – taught the same students for more than one year – and at least in
part, referred to their multi-year relationship with some students.

However, nine of the teachers also stated that their knowledge was confined to the
classroom. For example, one teacher said about her students, “I see them mostly in the
classroom so outside the class I don’t really know . . .” Another stated, “I would know more if I
saw them in the lunch room or hanging out after school, but I don’t. I just don’t.” The
interviewer made clear to the teachers that there were not any correct answers, no correct
amount of information nor did their responses necessarily reflect anything about their ability
to teach. However, teachers still made these caveats and at times apologized saying, “I’m
sorry. This probably isn't helping,” or “I hope I’m giving you what you need.” This limited
perspective of student relationships that is greatly dependent on classroom interactions is not
surprising considering the isolation that typically characterizes teachers’ work (Lortie, 2002).

We can further see the classroom view of teachers from the composition of the sociograms.
In Figure 6, we see that the composition of the networks that teachers generated is largely
classroom-based. Eighty percent of the people listed in the students’ networks by teachers
were students and 72% of those students were in the same classes of the students with whom
they were interacting.

A view from Mrs. Heckel’s perspective
While these results suggest that teachers’ awareness of student social networks is
constrained by what the teachers see in their classroom, it is not the case that a teacher’s
perspective will be richer just by having them travel to multiple classrooms. Mrs. Heckel, one
of the special education teachers, provides an interesting case. Special Education teachers at
this school must move to multiple classrooms in order to support students’ learning and carry
out their work. Mrs. Heckel had the opportunity to work in multiple classes seeing and
supporting students. She describes her work this way:

Interviewer: Do you see them (the students) in all of their core subject classes?

Mrs. Heckel: I see them primarily in math and English. However, last semester there was a Chemistry
class that had a lot of special ed students. Sometimes I would go into Hayward’s class. I had to work
out a schedule. I tried to fit in what their biggest weakness was. It's just the way it had to be
scheduled.

Therefore, she was able to see students in at least two subject areas and with different
combinations of students. However, she still acknowledged a limited view of her students’
social networks.

Figure 6.
Composition of the
networks

Source(s): Figure by authors
So I'm like in my little hole here and they come visit me here. Or the times I manage to get around to their classrooms. Usually I just get a chance to see what they're working on—not much friend interaction.

A little later, Mrs. Heckel was discussing a sociogram she had drawn. She generated a network for one of her students, a special education student. Also, she listed students in the network who were not classified as special education. Even though she was able to make the connection between her student and other students she had observed in the class, she knew very little about the other students. This is noteworthy because it shows an alternative working arrangement for instruction that still restricts the teachers' view of student relationships. Unlike the content area teachers, Mrs. Heckel is able to travel from one class to another and observe students in multiple settings. However, her focus on a small subset of students makes it unnecessary for her work to know much about the rest of the class.

In addition, she was not able to claim connections among the other members of the network. She states,

*Mrs. Heckel:* Some of these (students) I won't remember because they are not all special ed kids.

*Interviewer:* Are these all friends together (pointing to the sociogram she had drawn)?

*Mrs. Heckel:* Yeah, I think they all hang together. This one, Manny and Hank, I don't know for sure. Now, for this one, I don't really think it is a fair assessment because I only see them with the other special ed kids in here. I mean, for the music teacher, he (another non-special education student) might have fifty million (connections) because he likes music. That's the only person.

Mrs. Heckel is acknowledging that her statement of the students' network is not a complete view. The student’s network may be different in a class in which he has more interest as well as her limited view of the student. Her view of students in multiple classrooms is at the expense of limited views of the special education students. This is somewhat similar to the findings of other research examining teachers' knowledge of students' social networks. For example, teachers obviously vary in the extent to which they know about students' social networks (Gest, 2006) as well as what kinds of students they know more about (Pearl *et al.*, 2007).

It is evident that teachers' interactions and observations of students took place mostly in the classroom. Some teachers did seek to observe students outside of the classroom to gain some authentic understanding of the social groups in the school. One teacher, Mrs. Case, did so because of her suspicion of classroom social networks. She said,

In class limits who they’re talking to so I have to pay attention more to who they’re talking to in the hall, to see after school who is their best friend school-wide. Or when they come to my room to get makeup work or whatever, their tagalong buddy who comes with them is usually their best friend. In class, they deal with who they have to deal with in class.

What Mrs. Case says seems to make sense since students do not have a choice with whom they attend class. A student may talk to another student because they see each other every day, but the extent of their relationship and their influence that it exerts in their lives may stop at the classroom. Mrs. Case also claims that knowing who is connected to whom in class is really not getting at the whole of the student’s network, or even possibly capturing the most important people. At one point, she even says, “When we talk about this, it really depends on what network we’re talking about.”

In sum, an awareness of students' social networks was on the radar of these teachers. The teachers were all able to generate sociograms for students although varied in this respect. This is not surprising since expert and novice teachers interpret and perceive classroom events differently (Leinhardt and Greeno, 1986). The data suggest that this
variance may be associated with the class the teacher is teaching; content area versus elective course. While teachers claim to have an awareness of this information, what the teachers knew appeared to be constrained to the classroom. While the information and perception that teachers possess are important, our second question will explore the utility of the information.

*How do they use that information, if at all, for their work as teachers?*

In order to understand how the teachers claim to use students’ social network information, it is first important to note the potential they saw in this information. In Figure 7, we can see that the teachers talked about student social networks along two dimensions. One dimension was that social networks existed and they needed to be disrupted in order to preserve the decorum of the classroom. The other dimension was that social networks existed and needed to be encouraged or tweaked to facilitate a more productive learning environment. All but three of the teachers fit into both of these dimensions.

**Claims of utilization: grouping and seating charts.** Each teacher claimed that information about students’ social networks was important to their work. Their most common use was to create seating charts for the classroom. One teacher said, “I use this information when I decide how I am going to seat them.” Another common use was for grouping students for group projects. Every teacher said that social network information could be used to strategically put students together or keep them apart. One teacher stated, “I know I can put Zhane with those two students and they will get their work done.”

The use of this information for grouping revealed teachers’ perceptions of the role of social networks. It brings to light whether the teachers view the social networks as a positive or negative influence for students. Ms. Wagner said, “...like Kiana and Jahrod. I can put them together and they will always get their work done, but that’s because they’re motivated students, whereas putting Ernie and Keenan together or Ernie and Ty together, I might as well tell them to do whatever they want.” Knowing this information about the students held significant implications for how lessons would unfold and, consequently, how much the classroom environment would support student learning.

**Claims of utilization: social support.** For a few teachers, knowledge of students’ social networks provided a way to offer support. This support was sometimes academically related, but outside the realm of instruction. For example, Ms. Wagner said, “...if somebody’s absent and they miss something. I’ll tell one of their friends to remind them to turn something in.” Often, the support the teacher provided was not academic at all.
Interviewer: Do you use this information as far as running your class?

Ms. Totero: Yeah, if somebody’s absent and they miss something. I’ll tell one of their friends to remind them to turn something in. Or when I worked at Johnson (another school), I found out that certain kids were on the run because their friends would tell me and then I’d report it to the social worker. Or it helps me find out information ‘cause I just bug their friends and they tell me things that I want to know. Or getting things back like I got a lap top back from a girl that has been out on medical leave from one of her friends . . . so it does help.

For Ms. Totero, knowing who friends are is a gateway to understanding the condition of students’ lives outside of the classroom and even outside of the school. With her high-risk students, this information is helpful for directing support to the students and it is timelier than waiting for official channels. However, it is crucial to recognize that Ms. Totero’s words express a specific view of teaching that she has taken on. It is a view that values knowing about students outside of class. As a teacher, she seeks out this information to better provide social support for her students.

Discussion

Knowledge that supports teaching that does not fall into subject matter or pedagogy often tends to be treated as idiosyncratic or situational. Huberman (1993) claims that this perspective makes technical discussions about teaching difficult since situational knowledge is more like tinkering. However, teaching is more than a technical practice (Hargreaves and Stone-Johnson, 2009). By documenting this knowledge that teachers possess about students’ friendship networks and how they act upon it, we can overcome some of the idiosyncrasies and begin to consider how this information might be shareable and useful in supporting academic achievement. For example, how many other Mrs. Case’s are there who wish to put together seating charts or organize their groups with some sense of how the students interact together?

In addition, this study contributes to the research of teacher knowledge and expands what knowledge in practice might mean for a teacher. The knowledge of social relationships among students and how that is brought to bear on teaching practice is just one more element of the craft that has been relatively unexplored. Understanding this information’s importance can highlight further work in utilizing the data for better student outcomes as well as more efficient and holistic ways of gathering the information.

Hiebert et al. (2002) refer to teacher knowledge as being integrated around specific problems of practice rather than segmented into compartments such as content or pedagogy. It is worth considering what problems of practice the teachers were addressing when they used information about their students’ networks. For instance, keeping students on task was one problem that teachers addressed. By separating certain students, they knew to be good friends, some teachers disturbed social groupings they knew to be detrimental to the learning environment of the classroom. If this is the case, we might consider ways of getting the information to teachers earlier in the semester and combining this information with some other data.

It is particularly important to note that though teachers were sometimes unsure what to do with students’ social network information, every teacher in the study was able to represent every randomly chosen student’s social network. This finding is potentially of critical importance to those who are interested in developing ways to improve teachers’ access to information that they can incorporate into instructional decision-making. Understanding gaps in their knowledge, such as the classroom perspective, can be important for designing, for example, an information system for teachers (Shapiro and Wardrip, 2015).
Understanding the sources of teachers’ knowledge of student social networks has implications to the work arrangements of schools. By work arrangements, we specifically mean the temporal and geographic organization of a school. If teachers do seek to see students outside of their classroom, opportunities must be created for teachers to observe and interact with students, for example, in the lunchroom, or after school. In addition, if teachers’ rooms are not in a location where students often pass by in the hallways, the teachers miss out on those chances. For example, Ms. Van Remmen mentioned twice that she did not know as much about a student because they were in ninth grade and therefore predominately on another floor of the school building.

As we consider the role of teachers’ knowledge of students’ social networks, in general, it is important to consider the importance of this information in facing the challenges in some urban schools. In fact, knowledge of students’ social networks could be another way of building connections in school that supports academic as well as social and emotional learning (Blum et al., 2002; Osterman, 2000). The connectedness in schools can buffer a whole host of risk factors that can inhibit students’ success (Catalano et al., 2004).

While the descriptions of student social networks and their use of that information provide us with a qualitative window into teachers’ perceptions of their students’ social worlds, it is extremely difficult to generalize from these data. It is worth being skeptical of the teachers’ use of the data and pursuing this matter further in the classroom, although it is unclear how evident their use of student social information would appear. Claims of seating charts and grouping students may provide examples of evidence. Yet, it appears that beyond those sites of intervention, teachers are unsure how to use the information. It can be said that even with grouping, teachers may have conflicting philosophies of grouping. Mr. Diem said that for some friend groups in his classroom he would allow them to work together and for some he would break apart. We still need to tease apart the decisions for grouping and encourage teachers’ grouping strategies to align with their instructional philosophy. And we need to map their decisions to research on facilitating cooperative learning, such as building interdependencies into the group tasks (e.g. Johnson and Johnson, 1999).

In addition, it is difficult to capture the variability of teachers’ knowledge from the data because of the subjective nature of some of their comments. One teacher may be self-deprecating of themselves and the extent to which they know students, but yet have a very comprehensive knowledge of her students. On the other hand, a teacher may speak with confident phrasings about her knowledge of student social networks, but in reality, have very little idea, or the wrong idea. In general, like most data and evidence interpretations, how the teachers characterize their awareness and communicate the significance of what they know is mediated by their experiences and working knowledge (Coburn et al., 2006; Shapiro and Wardrip, 2011; Herman et al., 2012).

Nevertheless, discussing student social networks with the teachers generated a lot of interest, based on their questions, and comments during the interviews and in the weeks and months that followed. This alone hints at the promise of this kind of data. Knowledge of students’ social networks may provide more nuanced information for teachers to deal with the cultural and pedagogical dilemmas that they may face when attempting to carry out ambitious instruction (Parsons et al., 2018). As teachers become more attuned to the social environment of their classroom and the school, further design-based research could identify problems of practice on which social network information could come to bear. Moreover, iteratively designed teaching experiments could explore ways information could be used in the classroom. For example, could the facilitation of discussions change based on social network data? What might those changes look like?

The potential importance of students’ social networks does not lessen as we move our educational experiences online. In fact, new avenues of inquiry can emerge. As teachers still engage in grouping strategies through online discussions and project work, for example,
awareness of students' friends can be useful for allocating those groups. Moreover, the need for student social support through friends can be even more relevant. Research has long documented the isolation that learners can feel through online education and the need to build a sense of community (e.g. Barbour and Plough, 2009; Wicks, 2010).

Yet, online education may shift teachers’ opportunities to observe students’ friend networks. While our study suggests that the school served as a site for seeing relationships, online education removes those experiences. Discussion forums and video response platforms that support sharing may create new ways for teachers to discern student relationships. And how teachers perceive the pedagogical value of student social networks may shift. For example, teachers may seek to intentionally build cohesive class communities online where support is expected from everyone when the teachers are less able to identify close relationships of individual students.

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Further reading


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