

Interbeing in the Classroom Ecology:
Teacher-Student Relationship, Engagement, and the Emergence of Trust

Demetria Humphries

Colorado College

Abstract

Ecological principles of interdependence hold true in the complex system of a classroom: the wellbeing of one member affects and is affected by every other member. In fact, this interdependence extends beyond the members of the classroom to also include the ideas, curricula, and classroom structures, each weaving between and influencing the others. As living organisms (and ideas are indeed living), “Our very existence is relational” (Eisenstein, 2013, p. 15). This mixed-methods study investigated both the causes and the outcomes of positive teacher-student relationship in the classroom, with particular attention paid to student engagement. Student perspective, collected via pre- and post-student perception surveys as well as through small focus group conversations, provided a basis of both quantitative and qualitative data. Participants were 70 ninth- and tenth-grade students in two regular-track and one honors math class. Significant discrepancies between regular-track and honors student experiences were found in this study, with some contributing factors discussed; however, the myriad causes of those discrepancies are beyond the scope of this research. Rather, this study discusses the actionable components of a vibrant classroom ecology, with trust, engagement <-> relationship, and kindness emerging as the most significant contributing factors.

Keywords: Classroom ecology, teacher-student relationship, engagement, trust, interbeing

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Most of us deeply desire a sense of belonging in community. Given that school is the place where most youth spend most of their waking hours for at least a dozen years from childhood through adolescence (as do adults who choose to remain in school as educators!), school hopefully becomes a primary source of community, and a model for community in life beyond the institution and the diploma.

But how often is that sense of community really experienced in the classroom, particularly past elementary school? Many teachers at the secondary level report apathy, or lack of engagement, from their students, citing the lack of motivation or the hyper-digital culture of “today’s youth.” What prevents the development of vibrant community in the secondary classroom? In his touchstone book *The Courage to Teach*, Palmer (1998) pulls the veil on the culture of fear in which so many of us live, “The silent and seemingly sullen students in our classrooms are not brain-dead: they are full of fear” (p. 45).

Community is the antidote to that fear, but great courage is needed to traverse the stasis and normalcy of a disconnected, fearful life to “develop and deepen our capacity for connectedness at the heart of good teaching” (Palmer, 1998, p. 36). Self-awareness is essential to bridge that distance, for “reflection—true reflection—leads to action” (Freire, 1970, p. 40). Though it may initially be hard to see or admit, the fear which can lead students to silence and cynicism is mirrored in ourselves as leaders; as Palmer writes, “We cannot see the fear in our students until we see the fear in ourselves” (p. 48).

In order to broaden awareness of the actual states of our classroom ecologies, and the relationships within, this study relied on student perspective, via the Colorado Education Initiative’s Student Perception Survey (2015) and small focus group conversations with students.

The focus was on three primarily ninth-grade math classes, two regular-track and one honors level. A foundational framework of Bronfenbrenner's dynamic ecological systems theory and Herrera's classroom ecology provides a lens through which to consider the question, how can we better understand the cultivation of relationship and engagement in the secondary classroom?

Literature Review

Ecological systems theory, as defined by Bronfenbrenner (1998), views people as active agents shaping their environments and evoking responses, such that environment and inhabitant shape each other in dynamic relationship. Environments and ecologies do not arise randomly; rather, they are the result of an endlessly variable context in which no particular process can be understood in isolation (Bronfenbrenner, 1998; Darling, 2007). Extending this framework to the classroom setting, Herrera (2015) defines classroom ecology as that which "encompasses the interconnected structures, arrangements, and events that influence student and teacher actions and relationships in the classroom" (p. 125). Thus, in the classroom, the endlessly variable context which shapes the ecology of learning, and in turn shapes students and teachers alike, is necessarily a social context.

Given that classroom relationships are intricately interconnected with classroom outcomes, this paper uses the framework of The Colorado Education Initiative's Student perception survey (2015) to examine four categories of classroom outcomes: student learning, student-centered environment, classroom community, and classroom management.

Student learning can be measured by engagement as well as by academic achievement, both of which are associated with strong teacher-student relationships (TSRs) (Krane, Ness, Holter-Sorensen, Karlsson, & Binder, 2016; Quin, 2017). TSRs are often emphasized in and associated with elementary classrooms, in which students spend most of their school day with

one particular teacher. Indeed, in a three-year longitudinal study, Hughes, Luo, Kwok, and Loyd (2008) found that, “achievement, effortful engagement, and TSRQ [teacher-student relationship quality] form part of a dynamic system of influences in the early grades, such that intervening at any point in this nexus may alter children's school trajectories.” An elementary student’s school trajectory is of particular importance to this study, which examines the role of TSRs at the early high school level. By the time students enter high school, they carry with them a range of academic histories, sometimes in the form of heavy baggage, which can seem to both students and teachers as daunting or even impossible to unload. Kelly and Zhang (2016) confirm:

A small but important minority of students enter high school with a history of a lack of efficacy, identification, enjoyment, and interest towards school, and internalized beliefs that success in school is not particularly important to their futures. Yet, a central finding from this analysis is that a wide array of students from across the academic course-taking spectrum [applicable to honors and regular-track students] have developed a positive relationship with particular teachers and *report being engaged in those particular classrooms*. Results from the multivariate regression models support the inference that there is a strong association between teacher support and engagement. (p. 150)

Strong classroom relationships are not found to decrease in importance as students enter secondary school, usually in larger schools with many more teachers; in fact, positive TSRs may be all the more important at the high school level, as students often need more personal motivation to engage, and as they’re capable of connecting more deeply with adults.

A student-centered environment depends on the incorporation of student backgrounds and perspectives, or, as Herrera calls it, student biographies (2015). Herrera expanded upon Thomas and Collier’s (1997) prism model of linguistic, cognitive, academic, and sociocultural

student development to form the concept of the culturally and linguistically diverse (CLD) student biography. The CLD student biography “refers to the four interrelated dimensions of a student—sociocultural, linguistic, cognitive, and academic—that influence his or her [or their] linguistic and academic development” (Herrera, 2015, p. 125). An educator’s goal, which is always evolving with the living entity of the classroom ecology, is to come to know and understand students from many different lenses of these four dimensions, thereby prompting students to understand each other, the content, *and the world*, from many different lenses, as well.

The sociocultural dimension refers to the resources—or assets—a student has learned from birth and therefore brings to the classroom, whether or not the classroom typically recognizes those funds of knowledge (Herrera, 2015; Moll et al., 1992). The linguistic dimension views language not as fixed but as “the dynamic tool we use to express our thoughts and to communicate about, and comprehend, the daily interactions that surround us” (Herrera, 2015, p. 152). The sacredness of a student’s aptly-named *mother tongue* is of importance in this dimension, as is a range of non-verbal communication. Understanding the cognitive dimension of a student means the wizard-like task of attempting to peer inside a student’s mind, to get a sense of their way of thinking, knowing, and applying information. To marvel at a student’s particular approach to creative problem solving is a reflection of the cognitive dimension. Finally, the academic dimension considers how the other three dimensions fit in—or not—to a student’s school experience, which often has to do with “the level of access which has been afforded to the individual, particularly if a high-quality education has been denied due to a student’s level of linguistic ability or socioeconomic background” (Herrera, 2015, p. 20).

Classroom community may be the classroom outcome that is most obviously linked with strong relationships, as community is understood to be a social undertaking. But as the framework of a classroom ecology suggests, classroom community goes beyond interpersonal relationships to encompass something closer to the *feeling* within the classroom (Palmer, 1998; Krane, Ness, Holter-Sorensen, Karlsson, & Binder, 2016). Palmer (1998) defines community as “an outward and visible sign of an inward and invisible grace, and the flowing of personal identity and integrity into the world of relationships” (p. 92). This description of the porousness between self, other, and the relationships we forge between us nods to Bronfenbrenner’s ecological systems theory, in which all living entities are engaged in mutual and continuous co-creation. Palmer continues with an image which evokes an ecosystem, “The hallmark of the community of truth is in its claim that reality is a web of communal relationships, and we can know reality only by being in community with it” (p. 97).

Classroom management is often thought of as the successful implementation of a series of procedures (Wong & Wong, 2014), but teacher-student relationships, which can never be reduced to a formula, are found to be a significant contributing factor to balanced classroom management (Quin, 2017). In a meta-analysis of TSRs and student engagement, Quin (2017) found that better TSRs were associated with increased attendance and reduction of disruptive behaviors, suspension, and dropout.

The purpose of this research was to study the interconnectedness of relationship and engagement in the classroom. Student perspective, gathered through survey as well as through conversation, was upheld as the primary source of information as to what’s really going on in our classrooms—what’s working, and what’s not. Specifically, this study inspects classroom ecology through the categories of student learning, student-centered environment, classroom community,

and classroom management. The driving research question was, how can a teacher create strong teacher-student relationships, and how can those relationships promote student engagement?

Methods

Design

This mixed-method, action research, case-study design took place at a public high school in the Southwestern United States, with a student body population of approximately 1,600 students. Two classes of regular track Algebra 1-2 and one honors advanced Algebra-Geometry were the setting for this study. The study took place during the third quarter. Two quarters of observation and participant instruction was conducted prior to the start of the study.

Participants

Participants were 63 ninth- and 7 tenth-grade high school students, ages 14 to 16, enrolled in either regular-track Algebra 1-2 or advanced Algebra and Geometry. Gender-identification of participants was nearly evenly-divided between female and male, including several gender nonbinary students. Participants completed the pre- and post-student perception surveys voluntarily and anonymously. Nine participants also participated in three distinct focus group conversations.

Measures

Student Perception Survey.

The Colorado Education Initiative (CEI) student perception survey was developed with the “elements of student experience which most closely correlate to the professional practices that are demonstrated to improve student outcomes” (CEI, 2015, p. 4). The CEI collaborated with 16 partner districts in Colorado throughout the pilot period to develop the student perception survey for widespread use throughout Colorado school districts. The survey aligns

with Colorado's Teacher Quality Standards and can be used as a formative tool or as a summative measure of teacher evaluation.

As administered in hard copy form, the student perception survey has 34 items on one double-sided piece of paper, with four response options for every question: Never, Some of the Time, Most of the Time, and Always (Appendix A). None of the survey items was reverse-coded, meaning that a response of "Always" was in alignment with classroom best practices for every survey item, and a response of "Never" indicated a need for improvement for every survey item.

The CEI organized survey items into four categories, listed out of order on the survey so as to prevent repetitiveness in survey sequencing and to promote unique reflection for each survey item. The survey categories were: student learning (15 items), student-centered environment (7 items), classroom community (8 items), and classroom management (4 items).

Student focus group conversations.

In mid-March, following administration of the post-student perception survey, I hosted three lunchtime student focus group conversations for each of the three ninth-grade classes which participated in the surveys (two regular track and one honors class). Focus groups ran about thirty minutes each, with three students in each group and pizza provided as an incentive and as a thank you for student participation. Of the nine total participants, six were female and three were gender nonbinary. Male students were invited to participate, but I acknowledge the limitation of voices in these discussion groups in lacking male student perspective.

I prepared conversation prompts using survey item correlations and used these prompts as jumping-off points for more organic conversation and reflection from students. I aimed to listen more than I spoke and let the students' reflections follow their own course and drive the

conversation. When one line of reflection was thoroughly explored, I introduced a new prompt to steer conversation in a new direction.

Procedures

Student Perception Survey.

Students completed identical pre- and post-student perception surveys authored by the Colorado Education Initiative (Appendix A). The pre-survey was administered in mid-January, 2019, and the post-survey was administered in early March, 2019. The survey was administered at the beginning of a regular class period, with context given that data collected from the survey would be used to aid my personal research and that student responses would have neither positive nor negative consequences for individual students. Students were told they could write their name on their survey if they pleased but that they were not required to do so; most students did not submit their name on their surveys. Most students completed the 34-item survey in 10-12 minutes.

Student focus group conversations.

In mid-March, 2019, after both the pre- and post-student perception surveys were administered, I facilitated three separate lunchtime focus group conversations with three students in each group. The three focus groups represented each of the three classrooms which are the subject of this study, so that participants in each focus group had both familiarity with each other and a common classroom context to which to refer. Using preliminary data analysis gathered from the student perception surveys, I grouped survey items with the strongest Pearson correlational coefficients, noting in particular the groupings which may not seem to be correlated given common sense understanding of classroom dynamics. Some of these groupings included, “*My teacher makes learning enjoyable*” clustered with “*My teacher pays attention to what all*

students are thinking and feeling,” and “I feel like an important part of this classroom community” clustered with “My teacher knows what is important to me.”

I invited all students to participate in the lunchtime focus group conversations, and I followed up with personal invitations to particular students who have demonstrated self-reflective practices and a strong willingness to participate in a positive classroom culture. I provided pizza during these lunchtime focus group conversations and audio-recorded then later transcribed the conversations.

Data analysis.

Student Perception Survey.

The program IBM SPSS Statistics 24 (SPSS) was used to analyze student perception survey data. Survey responses of Never, Some of the Time, Most of the Time, and Always were coded as 1, 2, 3, and 4 respectively, entered into an Excel spreadsheet, then imported into SPSS. Reliability, t-, independent samples, and correlational tests were run.

Student focus group conversations.

Audio recordings from the student focus group conversations were transcribed precisely in Microsoft Word. I highlighted key quotes from students, then organized the quotes thematically in a separate document. Emergent themes were: Student-Teacher Bonding with subcategories of Trust, Caring, Teacher Attentiveness/Showing Up/Wanting to be Here, Respect, Inclusion, and Student Choice/Autonomy/Student Self-Advocacy; Peer Bonding; Academic Engagement <-> Relationship; Non-Academic Bonding; Depth of Knowledge/Relevance; Motivation; Anxiety; and Balance of Fun and Work.

Results

Student Perception Survey.

All student responses in the pre- and post-student perception surveys were input into Microsoft Excel, organized by class period (2nd period honors, 5th period regular-track, and 6th period regular-track), pre- versus post-response, and survey item category (student learning, student-centered environment, classroom community, and classroom management). Total values and means were calculated in Excel, then all data was imported into IBM SPSS Statistics 24 (SPSS). In SPSS, reliability of the measure was tested using Cronbach's alpha based on standardized items. This reliability test was run for pre- and post-results of each of the four categories, for a total of eight reliability tests. Seven out of the eight reliability tests were strong, with pre-student-centered environment being the exception, though it was very close to strong reliability at 0.691.

Next, an independent samples t-test was conducted using Levene's test for equality of variances between regular-track period five and regular-track period six. Significance was greater than 0.05 for all eight pre- and post-categories, meaning that equal variance can be assumed between the two classes. The t-test for equality of means between classes produced two-tailed significances greater than 0.05 for all eight pre- and post-categories, meaning that the difference in means between periods five and six was not significant.

The independent samples t-test using Levene's test for equality of variances was repeated comparing honors period two and regular-track period five. Levene's significance was greater than 0.05 for all eight pre- and post-categories except for pre-student centered environment, so equal variance is assumed for all but that category. The two-tailed significance in the t-test for equality of means was less than 0.05 and therefore significant in every category except for pre- and post-classroom community. The two-tailed significance for pre- and post-student-centered environment and pre- and post-classroom management ranged from 0.000 to 0.002, indicating

very strong significance. The independent samples test was repeated again comparing honors period two and regular-track period six yielding similar results, meaning that the comparisons between honors and regular-track classes were consistent regardless of class period.

Next, a correlations test was run using the Pearson correlation measure and two-tailed significance comparing all 34 survey items. Significances at the high double-asterisked 0.01 level (two-tailed) were marked and clusters of survey item correlations were noted. In particular, the strongest correlations measuring above 0.500 were highlighted and used to drive questioning in the student focus group conversations.

Overall difference from pre- to post-administration of the student perception survey was inconclusive across the board, due to many time-related factors to be discussed further in the limitations section of this paper.

Student focus group conversations.

I transcribed audio recordings of the three student focus group conversations into a Word document, highlighted student quotes which I believed may be significant due to clarity of reflection or relevance to student perception survey categories, then I organized the quotes in a new document according to salient themes (listed in Data Analysis). The largest emergent themes were Student-Teacher Relationship: Trust; Academic Engagement <-> Relationship; and Depth of Knowledge/Relevance.

Synthesis of Student Perception Survey and student focus group conversations.

Tables 1-4 illustrate the synthesis of the student perception surveys and the most relevant quotes from the student focus group conversations into four tables, organized by survey category. I aligned each survey item with emergent themes from the student focus group conversations, then selected one or two student quotes to reflect an experience with that survey

item, be it positive or negative. Quotes are coded as positive or negative and as honors or regular-track. It is worth noting that I did not question students directly about each survey item, so exemplary student quotes which pertain to the survey items were reached more organically, and there isn't an exemplary student quote for every survey item listed.

Of the total 37 exemplary student quotes (Tables 1-4), 17 are from students in a regular-track math class (14 negative, 3 positive), and 20 are from students in the honors math class (2 negative, 18 positive). While the majority of these student quotes reflect upon their experience in their current math class, some of the quotes, both positive and negative, reflect upon a range of other classroom experiences. Nonetheless, the range and attitude of these quotes illustrates a stark contrast between the evaluations of students in honors versus regular-track math classes: though the number of quotes in both groups is about the same, only 18% of reflections from the students in regular-track classes were positive, whereas 90% of reflections from students in the honors classes were positive.

Student Learning.

As the most robust category of the student perception survey, student learning comprises 15 survey items. A range of themes from the student focus group conversations are represented in the category of student learning, the most prevalent being Depth of Knowledge (DOK)/Relevance (“*When we study a topic, my teacher makes connections to other subjects or classes*”), Academic Engagement <-> Relationship (“*When the work is too hard, my teacher helps me keep trying*”), and Teacher Attentiveness/Wanting to Be Here (“*My teacher knows when we understand the lesson and when we do not*”).

There are 19 exemplary student quotes in this category: 14 are from students in the honors math class, and of those 14 quotes only two are negative/constructive criticism, both of

which are referring to poor experiences in other classes. The remaining five quotes are from students in the regular-track math classes, and four of those five quotes are negative/constructive criticism.

Student-Centered Environment.

There are seven student perception survey items in the category of student-centered environment, most closely aligned with the discussion group themes of Trust (“*Students feel comfortable sharing their ideas in class*”), Caring (“*My teacher cares about me*”), and Respect (“*My teacher respects me as an individual*”). Of the seven exemplary student quotes in this category, all three quotes from students in honors math are positive reflections of their experiences and all four quotes from regular-track students are negative/constructive criticism.

Classroom Community.

Eight items from the student perception survey comprise the category of classroom community. These eight items reflect a range of themes from the student focus group conversations, including Teacher Attentiveness/Wanting to Be Here (“*My teacher would notice if something were bothering me*”), and Depth of Knowledge/Relevance (“*My teacher knows what is important to me*”). But the items in this category are most closely aligned with the theme of Academic Engagement <-> Relationship, which points to the interdependence of academic success and strong teacher-student relationships (“*I ask for help when I need it*”). Of the eight exemplary student quotes in this category, six are from students in regular-track math, and five of those six quotes are negative/constructive criticism. The remaining two quotes are both positive reflections and from students in honors math class.

Classroom Management.

Only four student perception survey items are in the category of classroom management. These items are most closely aligned with the focus group themes of Respect (“*Students in this class treat the teacher with respect,*”) and Motivation (“*Our class stays busy and does not waste time.*”) Three exemplary student quotes are in this category: one positive reflection from a student in the honors math class, and two negative/constructive criticisms from students in the regular-track class.

Discussion

The purpose of this research was to investigate how a teacher can create positive relationships in the classroom, and how those relationships may advance student engagement. My personal purpose in writing this paper was ultimately to inform my own teaching practices and, hopefully, to become a better educator. The scope of this research is not to explain the myriad contextual and historical factors contributing to the discrepancy between regular-track and honors student experiences but rather to demonstrate several of the factors contributing to those differences. These are the more immediate, alterable factors upon which teachers and students have measurable influence.

Given Bronfenbrenner’s theoretical foundation of ecological systems theory and its dynamic application to education in the framework of Herrera’s classroom ecology, this paper aims to identify root causes of a healthy classroom ecology, from which the many interlinked benefits of a positive learning environment may emerge. This research found that one of the foundational sources of positive teacher-student relationships (TSRs) and student engagement is trust. Trust is a linking thread throughout favorable responses on the student perception survey as well as in positive reflections in the student focus group conversations

Trust.

Ecological systems theory, and by extension a classroom ecology, acknowledges that the health of a system is dependent upon the health of its parts. If some parts of the system are sick or suffering, the whole system is affected by that pain. By extension, if some members of the classroom community feel exclusion or confusion, the whole classroom ecology cannot flourish. Trust is an important indicator of the health of the classroom system: if trust is present and strong between and among teachers and students, the system will grow. If trust is absent, on the other hand, the growth of the system is hindered, and relationships, engagement, and learning therefore cannot develop to their full potential.

Both teachers and students acknowledge that the road to a strong and trusting classroom ecology is a two-way street (O'Brien & Iannone, 2016; Krane et al., 2016). Research by O'Brien (2016) and Iannone confirms that "students want to be actively part of the classroom experience with the teacher considering students' academic as well as social and personal needs" (p. 930). O'Brien and Iannone continue that students want to "fit in" when they are with supportive teachers, as reflected by *N* in the regular-track math class, "If you're more connected with the teacher, you want them to be proud of you, so you work harder, and pay attention," and by *T* in the honors math class, "Definitely, if you develop a connection with your teacher and you want to hear what they say, then you're going to understand the content more because you're gonna want to listen" (p. 930; Table 1). A classroom ecology with strong relationships built on trust – which in turn leads to greater depth of knowledge and relevance of content – is a mutually-created context in which students' and teachers' investment feed each other in a positive loop.

Furthermore, contrary to common perceptions that TSRs are more essential in elementary school, when students are more dependent on authority and single classes bond more tightly, TSRs are shown to be as important – and in some cases, *more* important – at the secondary level

(Roorda et al., 2017). According to Roorda et al.'s (2017) meta-analytic study of TSRs and students' engagement and achievement, the correlation between positive TSRs and engagement is even stronger at the high school level than in elementary school. The study ventures this may be in part due to the tendency of students to become less engaged at a high school level, making the quality of relationships all the more crucial to establish engagement.

Additionally, the ability of adolescent-aged students to relate more deeply and to see their teachers as multi-faceted human beings may lead to the increased significance of TSRs in high school. It often takes more time and demonstration of caring to earn an adolescent student's trust—but when that trust is established, it may be all the more powerful a motivator. As *T* reflects, trusting in positive teacher-student relationships indeed provides substantial motivation for engagement, “You know half of us don't want to be here most of the time, we'd rather be like asleep or doing something else. But, having teachers that actually want to be here makes you want to go to class” (Table 2).

Engagement <-> Relationship.

Another positive loop in the classroom ecology exists between student engagement and teacher-student relationships: the stronger and more trusting relationships are, the greater student engagement is, and greater engagement in turn strengthens relationships further. Two significant contributing factors to engagement, and in turn to teacher-student relationship, are self-regulated learning and student autonomy.

Self-regulated learning is the ability of a student to maintain autonomous motivation and engagement in their own learning processes. The benefits of self-regulated learning are vast, including higher academic achievement and greater creative thinking (Zimmerman, 1990). León, Núñez, and Liew (2015) find that self-regulated learning is largely dependent upon the student

perception of classwork being purposeful and interesting (engagement), and the classroom environment and teachers being responsive and supportive (relationship). Regarding schoolwork being purposeful and interesting, *T* from the honors math class reflects high engagement, “Yeah, in previous math classes it’s really just been teaching to test, but in this math class we get like background information on like who invented things, and how it applies to actual everyday life” (Table 1). Meanwhile, *A* in the regular-track math class reflects, “I feel like history is more relevant because it teaches you like the past and the present, but then with math it’s like you really just use it in school” (Table 1).

Regarding classroom environment and teachers being responsive and supportive, *T* from the honors math class offers both a negative reflection of teacher-student relationship from science class and a positive reflection from math class:

[In science,] we try to learn it by ourselves, but it just doesn’t work, because we don’t have that connection with him, and we don’t, like – he talks, and it goes in one ear and out the other...But [in math,] we know that Mr. J and you care enough to know if we know how to do things, and know that probably, we either had a bad day or have test anxiety. (Table 1)

Student perceptions of both engagement and relationship, which promote self-regulated learning, are found to be stronger in students in the honors math class. The reasons for this discrepancy are layered and complex, but one significant contributing factor regarding engagement is high expectations: challenging content and greater depth of knowledge in an honors class generate interest and a sense of purpose, which in turn motivates students to self-regulate their learning.

The support of student autonomy implies the integration of student choice and input into both the structure of the classroom and the content of study. Student autonomy is widely

accepted as a significant contributing factor to student engagement. Gutiérrez, Sancho, Galiana, & Tomás (2018) write, “An instructional style based on the support of students' autonomy may be the key, not only for the greater satisfaction of the basic psychological needs, but also for students' success” (p. 85). The student perception survey item which most closely reflects student perception of autonomy, “*In this class, we have a say in what we learn and do,*” shows stronger rating in the honors math class than in the regular-track math classes (honors average=2.37; regular-track average=1.97).

Somewhat counterintuitively, student autonomy, which is to say a degree of independence, may in fact contribute to the stronger relations students report in the honors math class. The reason is twofold: first, given greater autonomy in learning, students take ownership of their learning and may feel less dependent on teachers' support, and second, when students are more autonomously engaged in their learning, teachers are freer to differentiate, offer support, and build relationships where needed.

Kindness.

Palmer (2004) defines a circle of trust as “a space between us that is hospitable to the soul” (p. 56). In previous writing, Palmer (1998) comments on hospitality, “Good teaching is an act of hospitality toward the young, and hospitality is always an act that benefits the host even more than the guest” (p. 51). This research found that a vital expression of that hospitality is through kindness. In a qualitative and participatory study of upper secondary schools in Norway, Krane et al. (2016) identified kindness as being pivotal to the creation of strong teacher-student relationships, including in the simple and silent expression of kindness through smiling. Krane et al. write, “When a teacher smiles in class, students might assume that he or she is thriving in their company; this could contribute to a warm atmosphere, which is associated with positive

TSRs” (p. 382). *Mi* in the regular-track math class reflects that the absence of this welcoming demeanor has an effect on the whole class, in accordance with ecological systems theory, even when conflict is not intended toward the whole class:

I’ve actually had teachers in the past, like, *scream* at the top of their lungs at my class. And I actually get really bad anxiety from it, because I feel like they’re also yelling at me – when they’re not addressing everyone, they’re addressing certain kids, but it feels like they’re yelling at everyone. (Table 4)

In accordance with this student’s terrible associations of teacher yelling, Pomeroy (1999) confirms, “Hardly surprisingly, students often cite public humiliation, especially shouting, as one of the most negative teacher–student interactions” (p. 469).

In contrast to teacher yelling, Pomeroy continues that, “The defining feature of the ideal teacher–student model which enables teachers to communicate ‘caring’, without inadvertently ‘parenting’, is dialogue” (p. 477). Student focus group conversations often referred to the importance of dialogue, for example *A*’s negative experience in science class, “Plus, when you have a greater connection, like when you understand something, you feel more safe to ask about it. Like with Mr. L when I don’t understand something I go to my classmates, not the teacher” (Table 3). Dialogue, therefore, is both a cause and an outcome of teacher-student trust, both reinforcing the other.

It is worth noting that the essential function of dialogue in the classroom takes form as both content-related and non-content-related conversation, and healthy dialogue is as important among students as it is between teachers and students. *V* from the honors math class reflects, “Yeah, I enjoy that [working in pods]. I didn’t really feel comfortable in the beginning of the year, but whenever you bond over something that you have in common, it’s a lot easier to talk to

people about it” (Table 3). This positive experience of working with peers in pods stands in contrast to a negative reflection from *Mi* from the regular-track math class, in which there is an absence of trust:

I feel like in 5th period, we’re just total strangers to each other at this point. Where I feel like if we did a little activity where we all like kind of sat at different pods with people we most likely didn’t know very well... that would help us kind of in the future make bonds with other kids. (Table 3)

While pod-bonding sometimes functions well in the regular-track math class, many factors including engagement with content, previous school experiences, and teacher intentionality with pods may contribute to less positive experiences with pods in the regular-track math class.

Limitations

The most significant limitation of this study was the short length of implementation, which spanned about two months. Suggestions for further research would be to measure pre- and post-student perception data over a duration of at least one semester, if not a full school year, with several surveys administered as check-ins which in turn inform lesson and classroom design in the interim period. Capacity for responsiveness is another significant limitation of this study; as a student teacher in the three classrooms inspected in this research, I had limited ability to change the classroom environment as well as our curricular approach. In future research, and in the spirit of true action research, data gathered from students, be it formal or informal, is best applied immediately and reflexively into teaching practices, in a continued cyclical praxis of reflection and action (Freire, 1970).

Another limitation of this study is the small sample size: this study was comprised of a total of three freshman-level math classes at one high school, belonging to two lead teachers and myself as a common student teacher between them. School- or district-wide implementation of the student perception surveys may well yield more meaningful results, which could again be supplemented with student commentary in focus group conversations. In particular, a larger sample size comparing honors and regular-track classes would be pivotal to assess the differences in these class designs, with more control over the variables of teacher experience, class culture, individual teacher disposition.

Conclusion

In his classic on revolution, education, and freedom, *Pedagogy of the Oppressed* (1970), Paulo Freire writes, “Trusting the people is the indispensable precondition for revolutionary change” (p. 34). Critical reflection upon the harried, hierarchal, and dropout-prone institutions of education in the United States leads many students, parents, and educators to agree that our systems of education are in need of revolutionary change. This research posits that such revolution is in relationship, and that trust is a necessary foundation from which to grow a vital classroom ecology, with strong relationships that reinforce student engagement.

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Table 1

Category of Student Learning

Honors **Regular-track**
 + Positive comment -Negative comment

Survey items	Themes	Exemplary student quotes
<i>My teacher makes learning enjoyable.</i>	Teacher Attentiveness/Wanting to be Here Student Choice Academic Engagement <-> Relationship Balance of fun and work	+V: I feel like it takes a little bit to get started, but we have a really nice thing going on. We respect each other... we talk as a class sometimes and we're just really goofy, but as soon as we get into stuff we get into it. It's a nice combo. -L: Ms. should do more, like she should do more hands on stuff. ... But we're always sitting in the stupid desks, for like 50 minutes and that's a lot to just sit all day, we don't ever get up and do anything... Because it's just a lot of paperwork, paperwork, paperwork, paperwork, paperwork.
<i>What I learn in this class is useful to me in real life.</i>	Depth of Knowledge (DOK)/Relevance	+T: Yeah, in previous math classes it's really just been teaching to test, but in this math class we get like background information on like who invented things, and who came up with this and what it was used for, and why we still use it today, and how it applies to actual every day life... which is like the big question about math, like how am I ever going to use this? -A: I feel like history is more relevant because it teaches you like the past and the present, but then math it's like you really just use it in school, but other than that I don't know...
<i>My teacher teaches things that are important to me.</i>	DOK/Relevance	
<i>My teacher knows the things that make me excited about learning.</i>	Motivation Academic Engagement <-> Relationship	-V: I feel like in classes that you don't have that connection with the teacher, it's just like nonsense spewing out of their mouth all the time. You don't make an important connection with what they're saying. And you don't want to put the extra time into what they're saying, to really like understand. +T: Like you have to <i>enjoy</i> teaching it and want people to get excited about it. Like you and Mr. J get so excited about math! ... And I feel like, the teacher loving what they do makes the students love what they do, 100%.
<i>In this class, we learn a lot every day.</i>	DOK/Relevance	+T: Mr. J has a really good, like, this is your time to do that, then this is the time to focus. You guys work really well doing that together.
<i>In this class, it is more important to understand the lesson than to memorize answers.</i>	DOK/Relevance	+T: Everything else is kind of just memorization, but then math is not memorization. It's like a big puzzle. +V: I like the way you guys teach it where we have to actually understand what's happening, and we talk about it, and we apply it to the real world so that we can see what's going on.

<p><i>When the work is too hard, my teacher helps me keep trying.</i></p>	<p>Explicit availability Academic Engagement <-> Relationship Motivation</p>	<p>+T: Definitely, if you develop a connection with your teacher and you want to hear what they say, then you're going to understand the content more because you're gonna want to listen.</p>
<p><i>My teacher accepts nothing less than my best effort.</i></p>	<p>DOK/Relevance</p>	<p>+N: It also makes me feel like, um, if you're more connected with the teacher, you want them to be proud of you, so you work harder. And pay attention. [A: Yeah.] That's happened to me before with some of my teachers, I didn't want to get bad grades in front of them, because they knew me.</p>
<p><i>My teacher knows when we understand the lesson and when we do not.</i></p>	<p>Teacher Attentiveness/Wanting to Be Here DOK/Relevance</p>	<p>-T: [In science,] we try to learn it by ourselves, but it just doesn't work, because we don't have that connection with him, and we don't, like – he talks, and it goes in one ear and out the other. Not because we don't pay attention or anything – just because there's really such a lack of connection in that classroom. +T: But knowing that Mr. J and you care enough to know if we know how to do things, and know that probably, we either had a bad day or have test anxiety, or you know, just things like that.</p>
<p><i>If I don't understand something, my teacher explains it in a different way.</i></p>	<p>DOK/Relevance</p>	<p>-Ma: I think that when you talk to teachers you don't want to upset them because if you do upset them you feel like, oh I just upset them, I don't know how I'm going to get through this.... You have that fear, because you have to stay with that teacher for the whole entire year that you're with them.</p>
<p><i>My teacher explains difficult things clearly.</i></p>	<p>DOK/Relevance</p>	<p>+A: When you feel closer to the teacher, you get more of the way they teach, and it helps you understand it way better... because like if you have a good relationship with the teacher, you like them and everything, so you pay more attention to them.</p>
<p><i>In this class, we have a say in what we learn and do.</i></p>	<p>Student choice/ autonomy</p>	<p>+V: I enjoy that we take those days to answer questions on the board to get to know each other. T: I was gonna say, I really love doing that.</p>
<p><i>My teacher talks to me about my work to help me understand my mistakes.</i></p>	<p>Teacher Attentiveness/Wanting to Be Here Caring Academic Engagement <-> Relationship</p>	<p>+A: I feel like when the teacher comes over and helps you or talks with you when you're working, I feel like that shows that they care, because they're trying to see how well you're doing, and if you need help. Because with most teachers I'm just quiet, and I try to figure it out without asking, so when you guys come over to see, it actually helps a lot.</p>
<p><i>My teacher writes notes on my work that help me improve.</i></p>	<p>Teacher Attentiveness/Wanting to Be Here Academic Engagement <-> Relationship</p>	
<p><i>When we study a topic, my teacher makes connections to other subjects or classes.</i></p>	<p>DOK/Relevance</p>	<p>+T: In our class, in J's class and with you, you both are like, you're very attentive to the students and their personalities, and what makes them happy, and things that they like. And how to make, like the scenarios fun and enjoyable, and like, relatable I guess. Like a fisherman on a boat or – you know what I mean. -L: I don't know, there could be, I mean, a lot of things she could do. Like relate it to jobs, like being an anesthesiologist, or like a nurse, like an engineer, you could talk about why those things apply.</p>

Table 2

Category of Student-Centered Environment

Honors Regular-track
 + Positive comment -Negative comment

Survey items	Themes	Exemplary student quotes
<i>My classroom is organized, and I know where to find what I need.</i>	(none)	
<i>Students feel comfortable sharing their ideas in this class.</i>	Trust Student self-advocacy	-Ma: I think the biggest problem is that the students don't speak up as much so it's hard for the teacher to be able to directly know what they're thinking. So it's not the teacher's fault that they don't know what the whole class is thinking, it's mainly the students' fault for not speaking up. -Ma: Yeah, and a lot of students think teachers are really scary. Like, it's really hard to go up to a teacher and be like, I don't understand.
<i>My teacher respects my opinions and suggestions.</i>	Respect Explicit availability	-Mi: I feel like sometimes teachers don't realize that they should be like, If you guys need someone to talk to, then feel to come to me or someone else. Because I feel like sometimes kids are just like, I don't know who to talk to.
<i>My teacher cares about me.</i>	Caring Motivation	+T: Like, you know half of us don't want to be here most of the time, we'd rather be like asleep or doing something else. But, having teachers that actually want to be here makes you want to go to class.
<i>My teachers pays attention to what all students are thinking and feeling.</i>	Teacher Attentiveness/Wanting to Be Here Caring Anxiety	+T: The thing is, for math especially, I think you have to really love your job, you have to really love math, because, I feel like there's so much anxiety surrounding just math the subject.
<i>My teacher respects my cultural background.</i>	Respect	-A: I would say [to be a good teacher], like, not focus on like a certain person in the class or certain people, and focus on everybody, to make them feel more comfortable.
<i>My teacher respects me as an individual.</i>	Respect	+V: I feel like if you respect people they'll respect you. If you give them the time to talk, then they'll give you the time to talk.

Table 3

Category of Classroom Community

Survey items	Themes	Exemplary student quotes
<i>My teacher would notice if something was bothering me.</i>	Teacher Attentiveness/Wanting to Be Here Caring	-Mi: There are several times in class when I'll be sitting there, and I'll either give a look to Ms. O, and I'll be like [exasperated face], because I won't really know how to say it and won't know how to word things... I won't say it out loud because I don't feel completely comfortable doing it.
<i>Our classroom materials (books, articles, videos, art, music, posters, etc.) reflect my cultural background.</i>	Respect DOK/Relevance	
<i>In this class, I feel like I fit in.</i>	Inclusion Peer Bonding Academic Engagement <-> Relationship	+V: Yeah, I enjoy that [working in pods]. I didn't really feel comfortable in the beginning of the year, but whenever you bond over something that you have in common, it's a lot easier to talk to people about it. -Mi: The class, some people in there can be like <i>really</i> scary to like, speak up to. Because you can either have the popular kids, who are really judgmental, or you can have the kids who you just really don't like, and sometimes that can really affect every relationship in that room.
<i>I feel like an important part of this classroom community.</i>	Inclusion Peer Bonding Academic Engagement <-> Relationship	+L: Every kid shows up [to Spanish], like every. Sometimes they don't do anything, they're just there to be there. -Mi: I feel like in 5 th period, we're just total strangers to each other at this point. Where I feel like if we did a little activity where we all like kind of sat at different pods with people we most likely didn't know very well... that would help us kind of in the future make bonds with other kids.
<i>My teacher knows what my life is like outside of school.</i>	Trust Academic Engagement <-> Relationship	+N: When she starts talking about her life, and people are like, yeah, they'll talk about theirs sometimes. -L: She cares who I am as a person, but I don't know, I keep my personal stuff separate. Especially with teachers.
<i>My teacher knows what is important to me.</i>	DOK/Relevance Caring	
<i>I ask for help when I need it.</i>	Trust Motivation Academic Engagement <-> Relationship	+A: Plus, when you have a greater connection, like when you understand something, you feel more safe to ask about it. Like with Mr. L when I don't understand something I go to my classmates, not the teacher.
<i>I feel like I do a good job in this class.</i>	DOK/Relevance	

Table 4

Category of Classroom Management

Survey items	Themes	Exemplary student quotes
<i>Our class stays busy and does not waste time.</i>	Balance of fun and work Motivation	+A: Yeah, and like your [the teacher's] attitude in the classroom changes how we feel most the time when we're in the classroom, like every time you teach us, I like it. I like the way you teach. It helps me like get out from the morning blah, and be more active.
<i>Students in this class treat the teacher with respect.</i>	Respect	-L: What's really big is how your peers see the teacher. Like if your friends don't like the teacher, you don't like the teacher. Not because you don't know her or you don't like her, just because your friends say, I don't like her.
<i>The students behave the way my teacher wants them to.</i>	Academic Engagement <-> Relationship	-Mi: I've actually had teachers in the past, like, <i>scream</i> at the top of their lungs at my class. And I actually get really bad anxiety from it, because I feel like they're also yelling at me – when they're not addressing everyone, they're addressing certain kids, but it feels like they're yelling at everyone.
<i>Students in this class respect each other's differences.</i>	Respect	



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Student Perception Survey

1. My teacher makes learning enjoyable.	Never	Some of the time	Most of the time	Always
2. What I learn in this class is useful to me in my real life.	Never	Some of the time	Most of the time	Always
3. My teacher teaches things that are important to me.	Never	Some of the time	Most of the time	Always
4. My teacher knows the things that make me excited about learning.	Never	Some of the time	Most of the time	Always
5. In this class, we learn a lot every day.	Never	Some of the time	Most of the time	Always
6. In this class, it is more important to understand the lesson than to memorize the answers.	Never	Some of the time	Most of the time	Always
7. When the work is too hard, my teacher helps me keep trying.	Never	Some of the time	Most of the time	Always
8. My teacher accepts nothing less than my best effort.	Never	Some of the time	Most of the time	Always
9. My teacher knows when we understand the lesson and when we do not.	Never	Some of the time	Most of the time	Always
10. If I don't understand something, my teacher explains it a different way.	Never	Some of the time	Most of the time	Always
11. My teacher explains difficult things clearly.	Never	Some of the time	Most of the time	Always
12. My classroom is organized, and I know where to find what I need.	Never	Some of the time	Most of the time	Always
13. Students feel comfortable sharing their ideas in this class.	Never	Some of the time	Most of the time	Always
14. My teacher respects my opinions and suggestions.	Never	Some of the time	Most of the time	Always
15. In this class, we have a say in what we learn and do.	Never	Some of the time	Most of the time	Always
16. My teacher talks to me about my work to help me understand my mistakes.	Never	Some of the time	Most of the time	Always
17. My teacher writes notes on my work that help me improve.	Never	Some of the time	Most of the time	Always

18. When we study a topic, my teacher makes connections to other subjects or classes.	Never	Some of the time	Most of the time	Always
19. My teacher cares about me.	Never	Some of the time	Most of the time	Always
20. My teacher pays attention to what all students are thinking and feeling.	Never	Some of the time	Most of the time	Always
21. My teacher would notice if something was bothering me.	Never	Some of the time	Most of the time	Always
22. Our class stays busy and does not waste time.	Never	Some of the time	Most of the time	Always
23. Students in this class treat the teacher with respect.	Never	Some of the time	Most of the time	Always
24. The students behave the way my teacher wants them to.	Never	Some of the time	Most of the time	Always
25. Our classroom materials (books, articles, videos, art, music, posters, etc.) reflect my cultural background.	Never	Some of the time	Most of the time	Always
26. My teacher respects my cultural background.	Never	Some of the time	Most of the time	Always
27. My teacher respects me as an individual.	Never	Some of the time	Most of the time	Always
28. Students in this class respect each other's differences.	Never	Some of the time	Most of the time	Always
29. In this class, I feel like I fit in.	Never	Some of the time	Most of the time	Always
30. I feel like an important part of this classroom community.	Never	Some of the time	Most of the time	Always
31. My teacher knows what my life is like outside of school.	Never	Some of the time	Most of the time	Always
32. My teacher knows what is important to me.	Never	Some of the time	Most of the time	Always
33. I ask for help when I need it.	Never	Some of the time	Most of the time	Always
34. I feel like I do a good job in this class.	Never	Some of the time	Most of the time	Always

Appendix A

Colorado Education Initiative Student Perception Survey