CULTURALLY RESPONSIVE PEDAGOGY IN TRACKED MATH CLASS

by
Rebecca Sella

Beatriz Quintos

(116996273)

(Amy Green)
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2. Abstract (Limited to 100 words)

Does student trust in teachers impact academic outcomes? How can a teacher build rapport with his or her students in the short time they have together? "Culturally relevant pedagogy" has been a part of the vernacular for almost thirty years now and "culture" more than fifty. Whether interpreted properly or not, CRP is a meaningful movement that calls teachers to more fully understand students, their families, and communities, with the higher purpose of using cultural values as a context for learning. Is CRP the answer to these questions? Can a teacher who knows students, families, and community garner trust and ultimately impact academic achievement?

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4. Introduction

"Good morning! Buenos dias! Selam! How are you? How was the rest of your day yesterday? Are you ready for another great day today? What are you most looking forward to? Are you stressed? How can I help you succeed today?"

This type of social exchange should be recognizable by teachers. It is a daily occurrence in a classroom where social skills and emotional development are a top priority. While COVID-19 introduced a great many tragedies in our society, it also highlighted the necessity and immense benefits of schools in society. Teachers see the blessings in schools and work much more clearly since returning to in-person learning after working in the remote setting. Being entrusted with the social, emotional, and academic development of one of our nation's most vulnerable populations is a blessing. The growing respect for the profession is a blessing. Being able to form genuine connections with students is a blessing. Support from families while working collaboratively to shape students into the best versions of themselves is a blessing. Their faces may be hidden behind masks, but little compares to the genuine social connection formed between a teacher and student in school.

By far, the most important value in a classroom is trust. Students must trust their teacher has their best interests at heart. They must believe their teacher is setting them up for success and genuinely wants to see them succeed. They must know that lessons and activities are a means to an end, and that the teacher is the expert with the plans all laid out. They must understand that deviations from the plan are in the group's best interest. They must believe that struggle will eventually result in greater senses of accomplishment and understanding. Indeed,

there is a lot of trust required to build a successful classroom environment with a strong relationship between the teacher and his or her students.

How can a teacher start to build this trust? How can he or she ensure that in a post-COVID-19 classroom, strong relationships are built effectively with students? How can he or she improve the practice of teaching to the extent that students feel confident about their learning and their abilities? Hopefully, through an increased emphasis on social and emotional development, and certainly with strong, purposeful self-critique, self-reflection, and action-research-driven classroom initiatives.

The purpose of this action-research is to examine student feelings of trust within teacher-student relationships. The goal is to figure out what teachers do or can do to make a student feel more comfortable in school, and more willing to challenge himself or herself beyond perceived abilities.

5. Theoretical Framework for the Research

There is a great body of research supporting the use of culturally relevant pedagogy in the classroom. A quick search of the words "culturally relevant" yields 358,624 results in the University of Maryland library database and 2,220,000 results on Google Scholar.

Culturally relevant pedagogy has its roots in the 1970s and 1980s, as educators began to note the importance of culture in the classroom, and was realized as we know it today by Gloria Ladson Billings in the early 1990s (Howard & Rodriguez-Minkoff, 2017). It was adopted by the education community, and Ladson-Billings notes in her 2014 article "Culturally Relevant Pedagogy 2.0: a.k.a. The Remix" the ironic difficulty of attending conferences surrounding her

movement because too many educators missed the mark. They misinterpreted the intentions and/or methods of CRP and adopted too-shallow iterations of the practice.

Modern efforts have pushed the boundaries of acceptable cultural relevance, and supported by Ladson-Billings herself, culturally *sustaining* pedagogy is a newer movement introduced by Django Paris founded on, "helping youth … maintain their cultural and linguistic norms and ways of being while also helping them understand dominant literacies and practices" (Howard & Rodriguez-Minoff, 2017).

This modernization of CRP as CSP builds upon a core tenet recognized early on by many researchers; classrooms must be concerned with the formation of action-driven citizens. This call for developing students into caring and empowered members of society is referred to in most of the literature as power relationships, communication, status, and access, focusing students on solutions, tools for discussing/solving problems in culturally congruent ways, posing problems, and teachers supporting student thinking (Bonner, 2021). It is referred to by Morrison et al. (2008) as critical consciousness, calling for teachers to help students develop critical literacy, work towards social justice, and understand explicit mainstream societal power dynamics. The authors claim this is the most important push of CRP because it sets students up to, "transform their lives and ultimately the conduct of society." Isn't this indeed the ultimate goal of education?

While it sounds great in theory, CRP can be daunting in practice. This is a tall order for many classroom teachers. Indeed, the job is already quite demanding, as evidenced by low retention rates. Working towards students' social and emotional competence in a post-COVID-19 world is challenging enough, yet alone following the curriculum, documenting

student progress, handling issues inside and outside the classroom to the best of our ability. However, it is a teacher's responsibility to involve students, families, and communities in this work. It is in doing so that teachers can truly appreciate and fully realize the core values of CRP and CSP, and ultimately of education.

Alison (2012) documents teachers' ability to involve students, families, and communities in ways that are meaningful for all participants. In "A Cultural Introduction to Math," she details an Aboriginal kindergarten's approach to family learning, with a PALS (Parents as Literacy Supporters) day. Students and their parents attend to multiple centers that are set up using culturally significant manipulatives, listen to stories that integrate cultural history, etc. Not only do the students involved benefit from seeing their culture as a valued part of their education, they and their families build a greater understanding and appreciation of the universal skills present in both their culture and the school culture. It is this symbiosis that reflects an ideal classroom setup, where students, families, and communities intersect with the common goal of supporting students, and students are then brought up to be thoughtful and critical contributors to society.

6. Methods

My project began as an investigation into whether there is a correlation between students' perceptions of their identities and perceptions of their abilities to do mathematics. For example, I wondered whether in general, the girls in my fifth grade math class perceived themselves as weaker in math than boys. After students created and presented "Math & Me" autobiographies, I extracted some of their presentation information and organized it into a chart to look for themes. In this chart, I noticed something jarring and borderline embarrassing that I had not before. In

my advanced math class, there are 14 students, most of whom are black or white, with the exception of one Latina student. In my grade-level math class, there are 12 students, most of whom are Latinx, with just two black and one white student. This was startling to see, but unignorable, and I had to know more about it.

As the students' Spanish teacher, and with some guidance from my professor at the time, Dr. Imani Goffney, I decided to implement a lesson from her colleague Dr. Julia Aguirre called "Abuelo's Birthday." It was rewarding to see many of my Latinx students help their classmates with the initial understanding of the word "Abuelo." While implementing the lesson, I liked the project-based nature, and wondered how teachers can do more to integrate their students' identities into the classroom environment.

I developed a Google Form Survey to collect student opinions on my effectiveness as a teacher, ranging from how well I know my math content to how well I know our class's collective interests. Students completed the survey in early March, and using the results from that survey I was able to make a deeper effort to make my lessons and teaching more culturally responsive and culturally sustaining. I attempted to do so in many ways, by implementing "Teacher for a Day," a large-scale project in which groups of students were assigned a math topic to review with classmates. In this project, they decided what was important, what to teach, what real-world relevance was significant to them, and what video they enjoyed most to review with. They were given the power in the classroom, and most students thrived in this model. I attempted to engage in more meaningful ways with parents, such as trying food from different cultures at our school's International Day and by allowing well over the required amount of parent volunteer chaperones for a class field trip.

Using the same questions as the previously linked Google Form, I re-evaluated my students in mid-April to see if the data had any significant change. Results are presented below.

Data Sources or Evidence for the Research

There were many sources of data for my research beyond the academic review presented in the above Theoretical Framework. Students' Math & Me Autobiography presentations served as the first source, with my small extraction document being the second. From an analysis of the information students presented in their autobiographies, I decided to take my project in a different direction, using results from the Google Form surveys to guide my intervention. After the intervention, I surveyed students using the same Google Form to compare and see if the intervention was successful or not.

There are limitations to my data sources, the primary one being my students' age (10-11) preventing them from fully understanding the survey prompts, however the data convinces that my students overall had a better impression of me as their teacher after my intervention. Even including outlier data from the form results, I was able to improve my students' perceptions of me by 5%.

This shows just how valuable every minute is with a student. Every moment is an opportunity to show care. In an approximately month-long intervention, I was able to improve student perceptions of me by 5%. That may sound small initially, but it is huge. If every project addresses students like this one did, their perceptions of teachers could grow by 5% until it maxxed out at 100%. We would have students' complete trust in us and a healthy classroom environment by the end of the year. This could then carry on into future grades with other

teachers. Imagine what teachers could accomplish from K-8. Schools would be much healthier places overall, where students trust their teachers to do their job and to do it well, and therefore are able to focus more on learning than on other concerns.

7. Findings

This brings the original research question back into focus: does student trust in teachers impact academic success? From my small action research project, I cannot answer that convincingly. Of course I believe it is true, based on the subjective behavioral and emotional changes I have seen in the classroom since implementing my research project, but there is not sufficient/straightforward data collection to prove that. I cannot say that within a few months of conducting my research, students' grades dramatically increased as a result of my intervention, though I do note a change in student response to challenging questions. I have seen some of my lower-performing students gain confidence and raise their hands more in class, whether they have the right or wrong answer. These are the kinds of improvements that define success for me.

How do education communities define success? Whose definition is most valuable? Is it teachers', administrators', students', parent's, community stakeholders', future bosses', or a collective definition? Do we define it with a number, such as with standardized test results, quarterly grades, or potential earning power? Is it defined and measured in more subjective ways, such as in confidence or ability to work in teams? Or is it a combination?

Ideally, this research would be able to answer those additional questions about how success is defined, and ultimately follow students through grade school, high school, and beyond, to measure whether or not success could be tied back to trust in teachers. It is certainly

a question that is worthwhile and should encourage educators to take their time with students seriously, building trusting relationships that are foundational for future success, however it is defined.

8. Conclusions

After noting the racial inequities between my math sections, this became an area of focus for my research. When I assigned students the My Teacher Survey, I wanted to be sure to analyze results based on similar breakdowns of gender and/or race. Data results are listed in great detail in the Responses spreadsheet (student names have been removed for safety).

In the initial survey I noticed the students who gave the lowest rating were white males (2 students) and the highest were Latino males (3 students). I find this interesting because I thought the girls in my class would have the highest perception of me, but this was not the case. They seem to be the ones with whom I have good rapport; they love to stand at my desk and make jokes. I appreciated the little surprise that the group with the highest perceptions were Latino males. It also made me wonder though why the boys in my class have varied opinions of my teaching. Do I subconsciously treat the boys in my class differently from one another? Is the data coincidental or reflective of some deeper need to analyze my approach to boys in the classroom? Why do black boys feel worst about my teaching and Latino boys the best? It is surely worth further investigation.

After implementing my intervention, the Teacher for a Day project, I resurveyed my students and compared the new data with the old. In it, I noticed an overall increase of about 5%, and noted increased ratings across all subcategories of student demographics, with the

exception of black males, which decreased from 3.38 to 3.22. It certainly does make me wonder more specifically the kinds of interventions my black male students would prefer. Unfortunately, fifth grade students do not give the best feedback for teaching; most of the feedback I received was that they wanted more recess time and more candy! In order to address this inequity moving forward, I would like to turn again to the academic research, with a particular lens on engaging black males in culturally responsive mathematics teaching.

Undoubtedly it is important to address all students in the classroom, and to be critically and culturally aware of the differences of need between students of varied backgrounds. This ties back to the research presented on CRT and CST in the Theoretical Framework. This research could be brought further in many different directions, with an investigation into black male students' perceptions of teachers based on different project implementations and culturally responsive approaches, the original research question of whether or not increased student trust in teachers improves academic outcomes, and how success is defined by different stakeholders in education.

9. References

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10. Appendices

Abuelo's Birthday

Google Form Survey

Math & Me Notes

Student Google Form Responses

Teacher for a Day Intervention

Equity Considerations:

This research certainly advances equity as a professional responsibility of math education research, with its emphasis on cultural relevance and responsiveness, but more particularly in the response to findings throughout. Certainly the academic research involved in studying cultural responsiveness points to more typically excluded cultures, such as in Alison's "A Cultural Introduction to Math," where she highlights how her school implemented a PALS program with parents to teach fundamental kindergarten math skills, including parents and focusing on skills used in the Aboriginal community the school served.

The equity lens considerations really kicked in while reviewing students' feelings towards math in the Math & Me research, and noting the inequities between my two sections of math students. This is something I will keep a close eye on moving forward, to see if this is a

trend that needs to be addressed in earlier grades, and if it is a coincidence. It will be a great responsibility to address if it is a persistent inequity.

Equity considerations really play into my findings as well and how I can continue this reflective practice moving forward. Clearly, addressing the black male students in my classroom is a key area for my growth as a teacher, and I hope that by continuing to embrace reflective practices, researching specifically how to incorporate black male culture into the mathematics curriculum, and giving students a voice in class, that I can begin to reverse the current narrative.