

Critical Knowledge Building

Dr. Debbie Donsky

Abstract

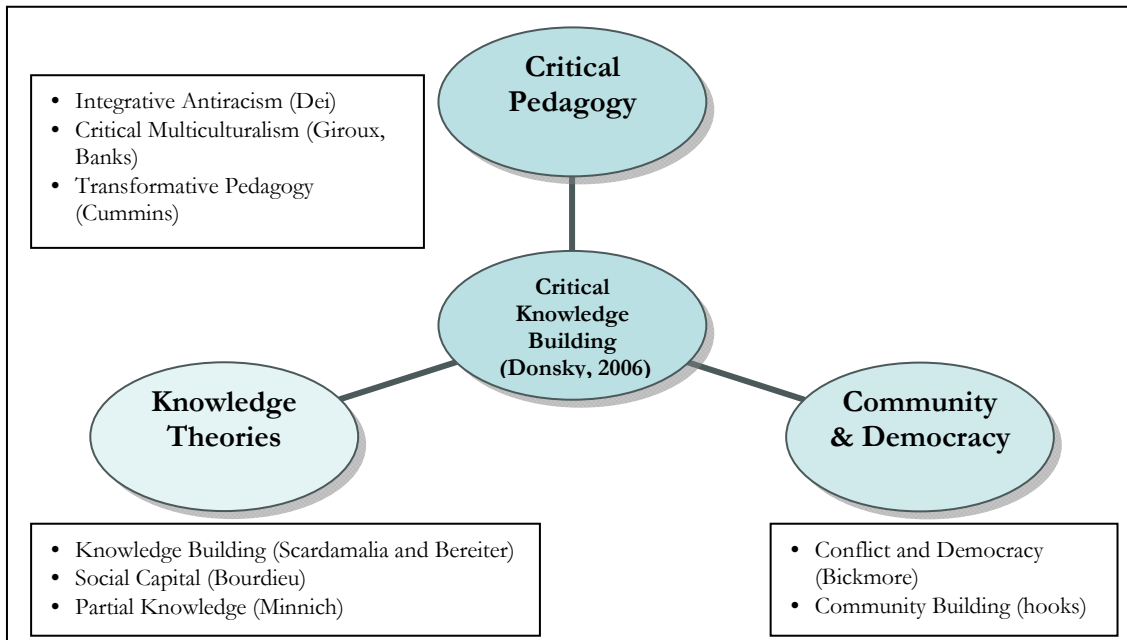
The study will review how a critical knowledge building (Donsky, 2006) environment is created and sustained by taking into consideration several factors: (1) how mandated curriculum influences the implementation of critical knowledge building and student engagement by limiting the value of indigenous knowledges and establishing cultural capital within the classroom (2) the dialogue and patterns of participation within this space; and (3) whose knowledge is valued and whose is silenced. The qualitative research methodology (Denzin and Lincoln, 2000) used in this study was critical action research (Noffke, 1995). Data was collected from a Knowledge Forum® (Scardamalia and Bereiter, 1994) database, classroom observations of in-class discussions with the students and teacher, focus group discussions and email. In addition, an analysis of the revisions within the Ontario Social Studies curriculum documents from 1998 and 2004 to understand the way in which both explicit and hidden curricula are mandated provincially. Within this Critical Knowledge Building classroom, curriculum extended beyond a particular grade level, students found opportunities to bring forth indigenous knowledges as a way to connect with curriculum, and the perception and experience of dialogue in the classroom shifted.

Critical Knowledge Building

Knowledge Forum®, (www.knowledgeforum.com), is an electronic group workspace designed to support knowledge building and knowledge building communities in a web-based environment. Knowledge building claims that it provides democratic learning environments where participants have epistemic agency, problems are authentic and idea diversity strengthens the work towards idea improvement. Critical knowledge building brings together knowledge building and critical pedagogy, specifically antiracism education (Dei, 1996), to explicitly address power in the classroom on many levels including: online and offline discussions, notes, and content as well as the explicit and hidden curriculum in the online and offline environments. It challenges the principles of knowledge building from a critical perspective. Critical knowledge building also acknowledges the strength of knowledge building to empower, enable and create shared dialogue in the classroom whereby the roles of teacher and learner are shared as well as expertise and experience to inform the knowledge building process in the classroom. In this study, students in a grade three classroom worked towards a democratic learning environment through shared space and shared dialogue by incorporating knowledge building within a critical frame.

Scardamalia and Bereiter (1994) state, “Schools need to be restructured as communities in which the construction of knowledge is supported as a collective goal, and the role of educational technology should be to replace classroom discourse patterns with those having more immediate and natural extensions to knowledge-building communities outside school walls” (265). These knowledge building communities are supported by the software, Knowledge Forum®, but also exist in an offline environment in spaces where knowledge building is practised (Messina, 2001).

This diagram shows that at the centre of my work is the idea of *critical knowledge building* (Donsky, 2006) which incorporates knowledge theories, critical pedagogy and the notion of democracy in the classroom.



Scardamalia and Bereiter describe knowledge building as “a collective pursuit of meaning and understanding” and a “deliberate effort to increase cultural capital” (Scardamalia 2003, 204).

These two statements, when placed within a critical discourse can be asked the following:

- (i) Who is in this collective?
- (ii) How does this collective come to be?
- (iii) What are the various power inequities inherent in this collective?
- (iv) How do the intersecting oppressions serve to reproduce these inequities through what is perpetuated as cultural capital?

In an antiracist classroom, students’ voices as well as the voices of their families are heard through the sharing of ideas, problems, and knowledge through the development of a critical community (hooks, 2003). Knowledge building works towards continual idea improvement as a

process that is marked by shared space and voice—*democratizing knowledge*. This project investigates knowledge building principles through a critical frame in which power relations are questioned and implicated in the knowledge building process. Varying expressions of power can be made explicit, but there will still be silencing through the hidden curriculum (Giroux, 1981, 1988; Valance, 1983) as well as power in the school and the system as whole. This can result in the detracting from the ideal of knowledge building.

Methodology

This research was designed to be “change-focused, collaborative and an iterative” (Lau, 1998). It takes the “research as praxis” approach (Freire, 2002, Lather, 1986) to make change from a collaborative process of review, implementation and design. In partnership with students and the classroom teacher, this project aimed to increase student engagement, access to technology, and professional development.

By merging the principles of knowledge building and antiracism education within a critical action research project, the theory of knowledge building can become more critical in its understanding of interactions, community and discourse. Critical action research is “about taking everyday things in the life of education and unpacking them for their historical and ideological baggage. It is similar to, but not the same as, the everyday process of improvement, in that it is public and collaborative” (Noffke, 1995:5).

Knowledge building theorists recognize principles which are indicators of knowledge building in classrooms including: student-focused inquiry, idea improvement through idea diversity and student expression of epistemic agency, the collective responsibility for community knowledge and the democratizing of knowledge through a shared work space where all participants have access.

Validity in research was considered through the triangulation (Denzin, 1978; Lather, 1986; Denzin and Lincoln, 2000; Ellis and Bochner, 2000) of various forms of validity including face validity (Lather, 1986; Tricoglus, 2001; Lincoln and Guba, 1985), catalytic validity (Lather, 1986) and reflexivity (Tricoglus, 2001; hooks, 1994), construct validity (Lather, 1986; Hammersley, 1990).

Several methods of data collection were used in this study to accommodate the triangulation of data including observations (Angrosino and Mays de Pérez, 2000), analysis of database notes through the Knowledge Forum Tool, The Analytic Toolkit (ATK) as well as key-words-in-context and word counts (Ryan and Bernard, 2000: 775-777). These methods were used to provide an in-depth analysis of patterns in participation in classroom discussions, database notes and email. Document analysis (Hitchcock and Hughes, 1995:230) of the Ontario Social Studies curriculum documents (*Ministry of Education, 1998 and 2004*) was also used to further deconstruct and understand the revisions to this document. Journaling and observations all occurred within the database and was accessible to all participants to ensure that there was ample opportunity for face validity by recycling data through the participants. Two focus groups occurred, once in the middle of the project and once at the end with students and the classroom teacher.

Participants

This project took place in an inner-city school in the Toronto District School Board. Participants included students, a classroom teacher and me, as the participant researcher. The sample size fluctuated throughout the course of the research and was dependent on the size of class. The school had a high student turn-over rate. In the span of the research project, four students left and eight new students joined the classroom throughout the year. On average, the

sample size was N=30. Of the eight new students, four of the students had been placed in the school from another school within the area due to expulsions or a series of suspensions. Class selection occurred by a teacher on staff volunteering to participate.

Findings

Curriculum: Hidden, Explicit and Transformative

A document analysis was done to compare to the Ontario Social Science curriculum documents published first in 1998 and then revised in 2004 (Ministry of Education). The process of revision involved a variety of stakeholders including curriculum consultants, teachers, students, and faculties of education among others who would be able to add a critical perspective to the existing social studies curriculum. It was the first of the documents published under the Harris Provincial Conservative government to be revised and was controversial within equity minded folk in the education system due to the bias in the document, specifically, the very Eurocentric perspective offered particularly in the *Heritage and Citizenship* strand in such topics as *Pioneers* in grade 3, *Medieval Times* in grade 4, *Ancient Civilizations* in grade 5 and *Aboriginal Peoples and European Explorers* in grade 6.

After reviewing the two documents, it was clear that there were revisions but the content was vastly unchanged. The titles of these topics changed but many of the expectations remained the same. The grade three curriculum changed from *Pioneer Life* (1998) to *Early Settlements in Upper Canada* (2004), the grade six curriculum changed from *Aboriginal Peoples and European Explorers* (1998). The grades four and five titles remained the same.

Revisions from 1998 to 2004 are predominantly in the document *Introduction*, rarely accessed by teachers where there is a clear explanation for the role of anti-discriminatory education within the social studies curriculum. As well, in the introduction, the roles of parents

and administrators in student achievement are included addressing the expanding definitions of school community. Language in the document is still reflective of essential knowledge, challenged by Minnich's concept of partial knowledge and denies the existence of a hidden curriculum or the need to have access to cultural capital for success in our school system. Statements referring to *essential knowledge* are in both documents and caution towards this type of terminology is necessary because once one form of knowledge is deemed *essential*, it necessarily de-legitimizes other knowledges (Minnich, 1990).

As critical educators, we have to look at the expectations as a place to start rather than a checklist to accomplish. Although work towards a critical practice will benefit students in terms of engagement with the curriculum, there is always a risk in moving away from prescribed expectations and into the realm of student-led inquiry as it may lead away from material on the provincial test. The barriers which exist to hold onto these expectations can be blamed on *regulations and accountability barriers* which address an educator's use of the mandated curriculum as a way to avoid transformative practices; *priority barriers* which addresses the process by which educators will agree that knowledge building is useful but they or the school/board have other more pertinent priorities; or *risk barriers* which address educators' need to stick with the "tried and true" because there is comfort in traditional practices (Scardamalia, 2003). Alternatively, these barriers can be understood within the context of cultural dominance as explained by Giroux:

...dominant culture is mediated in schools through textbooks, through the assumptions that teachers use to guide their work, through the meanings that students use to negotiate their classroom experiences, and through the form and content of school subjects themselves. (1981: 97)

This defines both the explicit and hidden curriculum agendas in the classroom but it also describes the obligation teachers feel to conform to these standards despite the role of the

standards to perpetuate power structures within schools. The concept of curriculum as transformative is a goal which runs through both antiracism and knowledge building.

Scardamalia claims that expectations go beyond the intended curriculum and into the emerging curriculum. In all cases, using authentic use of authoritative sources and epistemic agency (Scardamalia, 2002), students in a knowledge building classroom repeatedly go beyond the intended knowledge and find other ways of understanding. In this grade three classroom, students met expectations beyond the grade three curriculum by including understandings that could be found in *Communities around the World* (Grade 2), *Regions of Canada* (Grade 4), and the *Inquiry and Research Skills* into grade 8 *History and Geography* curriculum. Language expectations were also addressed as critical literacy became central to the inquiry itself. Students were able to contextualize their learning and draw on expectations beyond what is expected at their grade level.

Authentic Voice

Critical Knowledge building necessarily seeks ways to find authenticity through its practice, whether through the problems posed, ideas presented or experiences communicated through the process. Students found ways to connect their own knowledge and experiences into the mandated curriculum. While studying *Urban and Rural Communities*, the grade three students found ways to connect themselves to these expectations. Students began making connections between urban and rural Ontario to their own diverse experiences in urban and rural communities around the world:

Eritrea is a fun place. There are a lot of animals there like elephants. My family came from a rural area. In Eritrea everyone knows each other so know one is a stranger. Everyone in Eritrea play games and the most games we play is soccer and keep it the hoola hoop up. -Sharon

This same student, in discussing book knowledge versus family knowledge explained, “family information is more important because these stories are passed down and they are passed on and it tells me who I am and where I come from”. Students begin to value their own family knowledge and experiences while engaging in the curriculum.

Essentializing and Inclusivity

Students’ own life experiences can inform what they research in books and on the Internet as the class worked towards inclusivity rather than a sense of completeness. In claiming to have expertise, essentializing can be a possibility. When expertise is shared, as knowledge building is a shared through a social process, each piece of knowledge or each example of expertise, can build upon the next so that knowledge is understood as partial. “In the presentation of certain knowledges as ‘truths’, the complex, multiple and often contradictory constructions and contested meanings of identities and subjectivities of minority groups are often lost” (Dei, 1999:403). Students were invited to become experts at their own family knowledge as a way to deepen our understanding and to build knowledge as a collective.

Students were discussing the different homes in urban and rural areas. Two of the students’ families had emigrated from the Philippines and decided to research homes in that country compared with homes in Ontario.

Tamra: HOUSES ARE MADE OUT OF COOL NIPPA LEAVES



Kenneth: I just moved from the Philippines last year and I didn’t have a house with Nippa leaves. I don’t even know what Nippa leaves are. I lived in a big apartment building...

Neither answer was whole but together they work towards a more inclusive explanation of what homes can be in the Philippines. Students began to understand that neither experiences nor books can present complete answers and that to represent these experiences as complete or whole is to

present essentialized notions of cultural groups and their experiences—all ideas work towards a more inclusive representation.


Following this incident, students began questioning the texts, and what they considered to be viable texts in their research. This is further reflected in other discussion threads in which the titles of notes are indicative of this change in perspective. For example, one student, Ulan, contributed a note called, “[What my dad told me about Jamaica](#)”, and Sharon’s note addressed how rural Eritrea differs from rural Ontario.

Ulan wrote about Jamaica prior to our discussion about the Philippines discussion thread. She had used one of the cultural profiles to write about Jamaica, a country her parents had lived in and one she had visited many times.

 *New information* Jamaica to Canada. Your interest in reading this profile may come from being involved in an organized host program or your work may bring you 

Ulan had copied directly from the resource she used. I approached her about this and asked her if she knew why she shouldn’t copy straight from a text without saying where she got the information. In a journal note, I relayed a discussion Sonja, the classroom teacher, and I had around the shift to understanding family knowledge as legitimate knowledge:

Debbie: We also discussed that a lot of the ideas and information they have been provided is from a limited amount of resources and the students are beginning now to use their own and their family's knowledge to move the group forward. We will have to talk about where we can get knowledge and information including the following: books, posters, TV, internet sites, family, and friends.

The students should begin to branch out in terms of where they are getting their information from and we will provide them with the support to do so. Caution must be raised around copying from text books and there are a few examples of this already 

After speaking with Ulan, Sonja, and I asked her permission to use her note as an example with the whole group. She agreed. She opened the note where she had copied the information and told the students that she thought that if it was in a book, it was right. She then told the other students why it was not right just to copy without saying where they got information. She then told them everything she knew about Jamaica from her visits there and what her father had told her about Jamaica. Following this class discussion, Ulan created a new note about Jamaica.

In Ulan's note, *about Jamaica*, she extends her writing and her use of the scaffold supports to write her note. This note was composed after the class discussion about plagiarism and the importance of our family knowledge.

What I Know... In Jamaica, they swim and the colour of the water blue and the sand is pink. When the sun sets and the sun rises on the blue water, the water turns to pink.

In Jamaica, they eat sandwiches for lunch and in the summer they have ice cream and milkshakes. For dinner they eat rice, chicken curry and goat and vegetables and meat and this salty beef. On the holidays they don't celebrate Christmas. They celebrate their children's birthdays and celebrate Jamaican holidays by dancing, going to clubs and having fun.

When the children go to school, they have to wear uniforms and when the child has a mom, the mom is the child's teacher. Some of the kids go out with their father and the father goes to places and they have fun together. Some of the Jamaican people are poor and they have to work by hand and sell ice cream and peanut butter and jam sandwiches for the people and when the people don't have money they give them different Jamaican money.

If I went to Jamaica and I didn't have Jamaican money, some one would come to give it to me.)

What I Want to Know... How did the Black people come to Jamaica? I want to know more about the African roots of Jamaican people.)

What I Learned... I learned that I know a lot of things in my head and I don't have to copy from books.)

There is a value placed on the indigenous knowledges and the diversity of experience informing the knowledge production within this class. Rather than indicating what she learned about Jamaica, the key insight she gained in this note was that she had knowledge in her own head and she didn't always have to copy from notes. There was evidence in these notes of a shift whereby students began to see their own knowledge as valid and as a source to question, critique, challenge and inform the printed text. Ulan also wanted to find out more about her own history and heritage. The *What I Want to Know...* statement speaks not only to her engagement but the note itself also to a shift in cultural capital (Bourdieu, 1985) within the classroom. By explicitly placing value on the knowledge that Ulan's father had and publicly sharing this scenario with the class, students became acutely aware of the shift in values.

Power Plays: Dialogue and Sharing Knowledge

The dynamic in a Critical Knowledge Building classroom differs from a traditional classroom. Traditionally, the teacher holds knowledge and imparts this knowledge to the students in the classroom. The assumption that students bring their own knowledge to the classroom and that this knowledge not only is how they construct meaning but that others can benefit from students' knowledge, is to necessarily value the indigenous knowledges of the communities we serve. This is about power and the willingness of the teacher to surrender the power of the classroom in order to develop a shared space. In *Teaching Community: A Pedagogy of Hope*, hooks (2003) suggests, "dominance is altered when knowledge is shared in a way that reinforces mutual partnership" (74). It is within this partnership that she suggests finding "spaces of openness...search for the place of possibility".

Scardamalia suggests that within the principles of Knowledge Building, there exists this space of possibility whereby participants exercise their epistemic agency:

Participants set forth their ideas and negotiate a fit between personal ideas and ideas of others, using contrasts to spark and sustain knowledge advancement rather than depending on others to chart that course for them. They deal with problems of goals, motivation, evaluation, and long-range planning that are normally left to teachers or managers. (Scardamalia, 2002)

Dei (1996:29) cautions the claims that agency is equivalent to power. He suggests that those with agency can act but they must still act within the structure of the institution. “Individual agency as such is tied to and constrained by institutional power”. To truly share power, he explains, “does not necessarily mean to have less power, if social power is read as complementary and enabling in human relations” (29). The function of the teacher within the institution of schooling is still one of power.

In the first focus group, the students discussed how they got their work and what happened to it once they got it. When we extended the questions to think about how it was different when we used Knowledge Forum, the students explained that in a regular classroom they got their work, did their work and returned it to the teacher to get marked.

Tevin: “We hand in our book and our teacher checks it and we get it back after recess.”

Kenneth: “Ms. Neuman tells us what we learned and when we can learn.”

Tevin: “Building on Kenneth’s ideas, it is different because with Knowledge Forum, we can add onto our answers and make them better before we get a mark. Everyone tells us what we can learn.”

Once their work was marked, they got their work back. At this point, the students explained that they took their work home to show their parents or they kept it in a folder and then took it home when the unit was done.

When we talked about how Knowledge Forum was different, students said the following:

Kenneth: “The teacher doesn’t always tell us what to do. Sometimes we decide what to do or the other kids in the class help us.”

Shalinda: “It is like working in a community. We all have a job and we work together to get the community working. When we do our other work, we all work alone and only the teacher sees our work.”

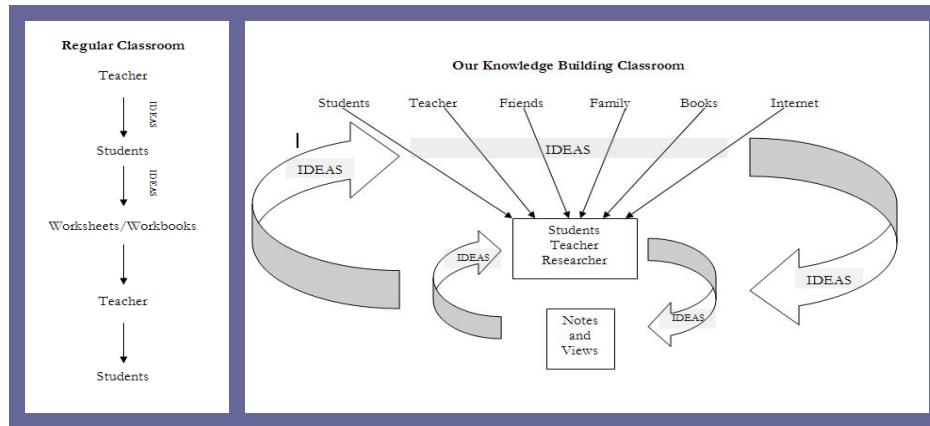
Sharon: “It is about communicating with everyone.”

Sally: “You get information from everything, your friends, classmates, family, just people you know and books and the internet too.”

In describing the difference between a regular classroom and a critical knowledge building classroom, one grade three student writes:

You are like the boss and can control it. When you are the boss, you have to be responsible because a boss is in charge and has power. You have to think about your answers and your questions because if you just write them without thinking, you will have so many people writing you back and saying...that isn't really what it is. You didn't think about this or that. So you have to be responsible. –Sharon

We tried to show what all of this would look like if we made a diagram. As the students described the way the regular classroom worked, I drew the left side of the diagram. The students described the process whereby they were assigned work, they used their ideas to complete the work which was typically completed in either worksheets or workbooks and then the work was submitted to their teacher. Once the teacher marked the work, it was returned to the students to be either put into one of their many subject folders if it was worksheets or returned with comments when it was their workbooks. Following this exchange, the next assignment would be handed to them. Students all worked on the same work at the same time although there were accommodations made for students with special needs.



The second part of the diagram was developed in the same way. The students explained that with knowledge building, they got their ideas from many different places such as their own experiences, the teacher, their friends, their family and also books and the Internet. The ideas that they chose to pursue were again the product of notes posted by their teacher, themselves or their friends. The ideas were always recycled back through those in the database but also with their family and friends when they would talk about what they were doing in the classroom. They also explained that when they would learn something new from their classmates or teachers, they would then look at the books and the Internet in a different way since they knew that the ideas in those places were not always the whole answer, as with the notes about the homes in the Philippines and life in Jamaica.

Students were accountable not only for the ideas that they posted, but for the ideas of the group. They did not depend on the teacher to intervene and suggest which answer was correct or incorrect but rather, student worked together to bring an idea towards a continuum of inclusivity through diversity in perspective, experience and knowledge.

Informing the Practice of Knowledge Building through a Critical Lens

The following table is a summary of how the knowledge building principles (Scardamalia, 2002) and the Antiracism Education Principles and Concerns (Dei, 1996) work together to

inform the practice of critical knowledge building. This table below summarizes the principles in all three practices: Knowledge Building, Antiracism Education, and finally Critical Knowledge Building.

Knowledge Building Principle (Scardamalia, 2002:82-84)	Antiracism Education Principle/Concern (Dei, 1996)	Critical Knowledge Building Principle (Donsky, 2006)
Real Ideas, Authentic Problems	Marginalization of Voices, Identity and Engagement, Confronting Diversity and Schools as Working Communities, Schools Reproducing Inequities, Student Engagement and the Pathology of Home Multiple roles of individuals, Support for collaboration, Space for “subjugated knowledges”, All school community members are legitimate contributors of knowledge.	Knowledge is Partial and based on Shared Understandings and Problems
Improvable Ideas	Identity and Engagement, Schools Reproducing Inequities Support for collaboration, Space for “subjugated knowledges”, Achievements and contributions of all groups, Use and access to resources, All school community members are legitimate contributors of knowledge.	All Ideas and Knowledge are Partial and Can Always Work Towards a Continuum of Inclusivity
Idea Diversity	Marginalization of Voices, Identity and Engagement, Confronting Diversity and Schools as Working Communities, Schools Reproducing Inequities Support for collaboration, Space for “subjugated knowledges”, Achievements and contributions of all groups, All school community members are legitimate contributors of knowledge.	Many Voices, Marginalized Voices and Shared Space
Constructive Uses of Authoritative Texts	Marginalization of Voices, Identity and Engagement, Confronting Diversity and Schools as Working Communities, Schools Reproducing Inequities Space for “subjugated knowledges”, Achievements and contributions of all groups, Use and access to resources, All school community members are legitimate contributors of knowledge.	Authoritative Sources Include Indigenous and Family Knowledge and Experiences with the Recognition that All Knowledge is Partial
Epistemic Agency	Marginalization of Voices, Identity and Engagement, Student Engagement and the Pathology of Home Multiple roles of individuals and the impact on the reproduction of inequalities in schools, Support for collaboration, Space for “subjugated knowledges”, All school community members are legitimate contributors of knowledge.	Students are Able to Seek Their Own Inquiry and Work Collaboratively to Do So
Rise Above	Marginalization of Voices, Schools Reproducing Inequities Multiple roles of individuals and the impact on the reproduction of inequalities in schools, Support for collaboration, Space for “subjugated knowledges”, All school community members are legitimate contributors of knowledge, Students have a “sense of responsibility to a	Rising Above Necessarily Involves Power...To Honour this Power...To Honour this Power, Students Must Ask for Permission and Create Rise-Above Notes Collaboratively and

	larger global citizenry”.	Respectfully
Community Knowledge, Collective Responsibility	Marginalization of Voices, Schools Reproducing Inequities, Student Engagement and the Pathology of Home Multiple roles of individuals and the impact on the reproduction of inequalities in schools, Support for collaboration, Space for “subjugated knowledges”, All school community members are legitimate contributors of knowledge, and Students have a “sense of responsibility to a larger global citizenry”.	Students Work Together to Create, Challenge, and Share Knowledge...All Knowledge is Socially Negotiated and the Responsibility of the Community
Democratizing Knowledge	Marginalization of Voices, Identity and Engagement, Confronting Diversity and Schools as Working Communities, Schools Reproducing Inequities, Student Engagement and the Pathology of Home Support for collaboration, Space for “subjugated knowledges”, Use and access to resources., All school community members are legitimate contributors of knowledge, Students have a “sense of responsibility to a larger global citizenry”.	The Ideal of Democracy is a Place Which Allows for Conflict, Negotiation and Enabling of Shared Voice

Creating a Space of Possibility—Critical Knowledge Building

The intent of this study is to challenge knowledge building theorists and practitioners to realize that the goal of fixing the “problems of the world” is attainable and represents pedagogy of hope, community, democracy and transformation. In this project, it means adding a critical perspective to knowledge building to provide a framework from which to understand inequities of power within the school system: the classroom, the school, the curriculum. It is the recognition that differing abilities and performance in the classroom are a result of hierarchies that exist to maintain current power structures and to covet the knowledge which provides access to the cultural capital which is the key to entrance into dialogue for all people, in all places.

Knowledge building theory in classrooms provides a space for discourse, discovery and critical dialogue but in order for this to happen, teachers and students must share expertise. Democratic education and critical education strategies call for both a delegation and a giving up of power from those who have power. In this setting, the educator can enable a classroom that is actually more powerful through empowerment and shared power. This is no simple task for even

those willing to hand over and share power and access to knowledge. People still imbued with power and privilege, chosen or not, by virtue of who they are or their position in the hierarchy of the school system as a whole—this power is thrust upon them. Explicit strategies, including critiquing the mandated curriculum discourse within the classroom, on- and offline, must be deconstructed. Naming of this process must be done throughout all classroom interactions—social and/or academic, with students, teachers, parents, administration and the larger classroom community.

If the research is transformative and critical, it must also critique the place in which it occurs—the online space, the classroom, the school as well as the roles people play in schools, whether supportive or non-supportive. This project documents two practices that traditionally evoke resistance from teachers: antiracism and technology. To be an antiracist teacher is to know how one is implicated in the inherent struggles and inequities in the school. It is to understand that celebrating difference or promoting pluralism is only beginning stages working towards social action. Technology is often met with resistance as many teachers feel intimidated by the technology and don't know how to problem solve within it, particularly when their students do. Knowledge building must exist within an environment where expertise is shared and as such, power is shared. Antiracism asks that multiple perspectives and collaboration are central to any type of critical understanding within the classroom. The feasibility of a project of this nature must be problematized within the school/classroom where the project takes place by considering the practices already in place in the classroom by the teacher, students and school administration. Dei suggests that “teachers can lead the way to resurrect the ‘subjugated knowledges; of their students... [and that] classroom instruction could encourage students to find their own voices” (1996:86). This is a space for critical knowledge building.

The goal of critical practice must be taken on by teacher education programs; the ministry, through teacher performance appraisals (TPA); and school boards and school administrators, for the instructional leadership and implementation of the TPA, to ensure that these practices take place in our schools.

Preparing teachers to construct a democratic learning environment for students of all racial and ethnocultural backgrounds will be a challenge for teacher-education institutions... Another major task of teacher-education institutions is to help educators work effectively and sensitively with race and ethnocultural knowledge-forms, and develop relevant instructional strategies for all groups represented in the school. To encourage teachers to develop a firm ethnocultural knowledge-base and to use it in pedagogically effective ways is a complex undertaking. Teachers should be sensitive to the risk of stereotyping students according to assumed racial and ethnocultural group characteristics. (Solomon, 1997)

The lesson should be that even though a text has been published, that fact alone does not make it authoritative. Lived experiences of families are authoritative texts. Personal histories are authoritative texts and when these are given value and made a part of the cultural capital in the classroom, students become engaged with the curriculum. Having the ability to look at a website and determine the perspective of the knowledge presented on the page is a skill beyond reading. Dei (1996) suggests, “We need new and alternative teaching and learning practices that initially help students in diverse school settings to critically re-read and re-think how Eurocentric knowledge is reproduced through negation, omission, denigration and misrepresentation of alternative ways of knowing” (85). This should be extended to include all schools, not just diverse schools. If the power structures are not critically analyzed, then those who hold power will never see the effect that power or privilege has on others. The concepts of power and control in the classroom, and right versus wrong, were overthrown in favour of a dynamic dialogue with all participants as equal and legitimate contributors.

Minnich (1990) asserts, “There is no more powerful position than that which dominates while appearing not to, no more influential position than that which sets the standards for and informs cultural meanings and their expression as knowledge” (161) and that we must recognize “now that the knowledge established by the dominant tradition is indeed *partial*” (1990:148). Knowledge building stems from idea improvement which indicates that knowledge building is not a place to arrive but a continual advancement towards clearer understanding and more informed theories, opinions and knowledge. When this is brought to an elementary classroom, students begin to see that their ideas and opinions are valued and that their experiences and the experiences and knowledge of their families are valid and inform their understandings, dialogue and discourse within the classroom and the school.

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