Cogenerative dialogues: transforming the adult basic education classroom

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Introduction

Imagine what it would be like if your class resisted the curriculum, its purpose, the class structure, and its likelihood of improving their chances of passing a high stakes assessment test in a period of ten weeks. Well, wonder no more, this scenario occurred in my General Educational Development (GED) mathematics class.

Arriving to work on October 10, 2007 I had a feeling that the day was going to be a good one. Not only did my train arrive early, but I was able to make my connection at Franklin Ave decreasing my commute by fifteen minutes. However, the good feeling that began the day soon dissipated as I heard the echo of raised voices. As I walked the short distance from the elevator to room 305, the yellow walls did not illuminate warmth or happiness, but a warning of caution. The air was layered with negative emotional energy and high collective solidarity as my students agreed and disagreed collectively with overlapping speech and the completion of each other’s sentences about the extra mathematics class added to their program. It seems they like the idea of an extra mathematics class, however, they did not like the structure. The additional class was a computer-assisted instruction (CAI) mathematics class. Entering the class a hail of questions descended upon me as the students angrily inquired about the significance of the CAI mathematics class: was attendance mandatory, to eliminating the CAI and having an instructor teach. Unprepared by the attack I quickly assumed my teacher authority and regained control of my class. I firmly emphasized the importance of the class as three hours of mathematics instruction a week was not enough to ensure a passing grade on the GED mathematics test, consequences for not attending class, and the beneficial properties of the CAI mathematics class. However, looking out at the faces before me, I knew the students did not believe me. To them, I was an instructor whom they saw four Saturdays consecutively, who was not familiar with their struggles socially, culturally, or academically. Thirty minutes later I began my class.

My students’ questions and actions bothered me that Saturday and the following week. I was angry, hurt, and disappointed because my students questioned and criticized a curriculum I wrote. Re-living the conflict from multiple angles I realized that I could not ignore or suppress the tension that occurred in my classroom. Ultimately, I realized I let my students down. I did not put their mathematical well being at the fore front, but the institution. The frustrations, self-doubt, hostility, and resentment displayed by my students that Saturday was the catalyst needed to enact change. Collins (2004) states emotions, ‘hold a society together—the ‘glue’ of solidarity—and what mobilizes conflict—the energy of mobilized groups’ (pp.103). Thus, anger was the emotion that disrupted the learning environment initiating the beginning of a collaborative classroom allowing students to learn at their own pace and build upon their understanding of mathematics.

Adult basic education in the United States
Adult basic education (ABE) programs in the United States assist many adult learners to develop literacy and numeracy skills to improve their employment opportunities and participate in post secondary education. Non-immigrants and immigrants who lack sufficient mastery of basic educational skills to function effectively in society do not possess a high school diploma; achieved an inadequate level of education; or unable to speak, read, or write the English Language enroll in adult basic education as it provides a second chance at education. In 1998, Title II of the Adult Education and Family Literacy Law of the Workforce Investment Act specifies that ABE programs must (1) assist adults to become literate and obtain the knowledge and skills necessary for employment and self-sufficiency, (2) assist adults who are parents to obtain the educational skills necessary to become full partners in the educational development of their children; and (3) assist adults in the completion of a secondary school education.

The majority of students who enter adult basic education programs do so for the latter reason. Students enroll in the High School Equivalency (HSE) programs within adult basic education programs to be prepared to take a five part high stakes assessment test known as the General Educational Development (GED) Test. The GED test is comprised of five academic areas social studies, science, language arts, writing and mathematics. To pass the test students must achieve a combined score of 2250 and, in addition, each individual subject area has a set passing score of 410 or higher. Out of the five academic areas in the GED examination students consider mathematics most challenging and an obstacle in obtaining their high school credentials. It represents an academic wall that many students failed to climb currently and in prior educational setting.

**Teaching and learning in adult education programs**

Students enrolling in ABE programs are seeking a different educational experience. However, upon entering these programs many adults realize that academic history repeats itself. ABE programs are reproducing the same curricula and teaching methods found in traditional K-12 educational settings, a 'one size fits all' approach to teaching and learning. Many ABE programs fail to utilize adult learners’ early academic socialization experiences, culture, and social experiences that students bring to the learning environment. Thus, students are placed in positions where they must reject their cultural knowledge and ways of knowing to be successful in school. According to Amstutz and Sheared (2000), in a study of 271 adult literacy programs, ‘73% were described as using activities and materials that [were] not related to their students’ lives and [were] teacher directed and controlled rather than collaborative’ (pp.155-156). The teacher was the essential element of the classroom as they plan lessons, classroom activities, homework, and assessment without consideration of students’ needs or interests. Indicating that adult learners are passive receptacles to be filled by the teacher’s knowledge, without recognition of what they can contribute to the learning environment given their experiences and educational background. Paulo Freire (1997) refers to this as the banking system of education where ‘education thus becomes the act of depositing, in which students are the depositories and the teacher is the depositor’ (pp.72).

Mathematics is a challenging subject to teach whether students are adults, adolescents, or children. Students’ beliefs, attitudes, and emotions play a central role in the learning or re-learning of mathematics. As adult learners engage in mathematical activities they are overcome with a variety of emotions such as fear, sadness, anger, and attitudes of defeat which can influence their performance on a task. Students’ beliefs that mathematics ‘is difficult and based on rules’ (McLeod, 2000, pp.246) hinders their potential in the classroom as they become afraid and timid weakening their ‘ability to solve nonroutine problems…[since] this kind of belief [was] generated out of the typical classroom context
in which students see mathematics’ (McLeod, 2000, pp.247).

To improve mathematics education in the field of adult basic education the current method of teaching and learning of mathematics must be abandoned, if we are to help the students we were intended to serve. By recognizing how students use their experiences, prior knowledge and perceptions, as well as their physical and interpersonal environments to construct knowledge affects thinking and learning. Students’ worldview or stocks of knowledge influence their learning process ‘they act on and within their environment with strategies, or schemes, as they seek to make their world similar and maintain their organization’ providing a meaningful learning experience for the autonomous learners while fostering critical thinking (Fosnot, 2005, pp.278). Adult learners should be visible participants in mathematics discourse rather than spectators.

**Cogenerative dialogues: a method for change**

Cogenerative dialogues emerged out of the context of coteaching by Wolff- Michael Roth and Kenneth Tobin among new science teachers in an urban high school in the United States. Roth and Tobin (2006) define cogenerative dialogues as a discussion between teachers and students to ‘identify and review what seems to work and what does not, especially practices and schema that disadvantage participants’ (pp.81). The main purpose of cogenerative dialogues is to listen, learn, and allow students to be heard, as they freely discuss reasons for their resistance to learning, classroom management, identify problems, and provide alternative solutions to support teaching and learning. It’s a safe space for teachers and students to communicate, collaborate, and implement positive changes in the learning environment. Students develop a sense of ownership in their education, while teachers receive useful criticism about their teaching, producing chains of successful interactions that are beneficial in the improvement of the learning environment. These interactions produce positive emotional energy among the participants as an element of trust between the teacher and students and within the students themselves.

As students’ voices are heard, resolutions made, and the teaching and learning of mathematics improved the students actively change their academic conditions rather than merely being a subject to them. As active participants students contribute to the class by engaging with the teacher, their peers, and the curricula refusing to be intimidated by the history and culture of their previous mathematics classroom. Students have the opportunity to

learn from each other, to de-center power in the classroom, to challenge disciplinary borders, to create a borderland where new hybridized identities might emerge, to take up in a problematic way the relationship between language and experience, and to appropriate knowledge as part of a broader effort at self-definition and ethical responsibility (Giroux, 1997, pp.176).

Introducing the element of criticality which has been absent in the adult basic education classroom. A pedagogy that acknowledge there is no specific methodology to teaching and learning, but one that is ‘attentive to the histories, dreams, and experiences that such students brings to school’ (Giroux, 1997, pp.140).

The power sharing properties of cogenerative dialogues reconstruct the authority of all participants, the teaching and learning environment while extending the agency of students, and transforming the role of the teacher. Any changes made are by the stakeholders’ students and teachers, those who have the most to lose, rather than waiting for recommendations from educators, researchers or policy makers.
Implementing cogenerative dialogues

Three students participated in the cogenerative dialogues which took place every Monday at 5:45 P.M. These students liked, disliked or had mixed feeling about mathematics and the current learning environment but, had a critical investment in the class. All need to be nominated to take the GED exam at the end of semester but, perceive mathematics as an obstacle in obtaining this goal.

In our weekly cogenerative dialogue students shared their perceptions of the computer-assisted class, the instructed class, the role of the tutor, and identified strategies for improving the curricula as I (teacher) was not present in the computer-assisted class.

The class was not what I expected

Through cogenerative dialogues, students articulated a dislike of sitting at the computer for three hours with limited human interaction. Thus, the majority of the students were place in a difficult position as they were familiar with the dominant way of schooling; the teacher-centered format originating from years of academic socialization. For adult learners, ‘to be in school means to be enveloped in didactic teacher-talk … the normal ‘common sense’ way to do education’ (Shor, 1996, pp.27). Students interacted within the classroom structure with an understanding of the cultural scripts and structures appropriating their roles, those of their peers and the instructor. However, when faced with a classroom environment which is not a symbolization of their cultural frame of reference of a typical classroom various emotions such as anger, fear, disappointment and frustrations were awakened. Turner (2002) stated ‘individuals will experience negative emotions when payoffs do not meet expectations’ (pp.126). Students will experience sadness and anger at themselves when they are fearful of the unknown which transforms into shame or guilt. These emotions occur consciously and unconsciously as students seek to verify their academic identities. Perceptions of self in academic situations ‘are always emotional; one does not have a view of self, without emotional valences’ (Turner, 2002, pp.101). For example, Casey a student in the class perceived herself as not a good student of mathematics and displayed emotions of frustration, sadness, and anger as she interacted with the subject, teacher, her peers, and the learning environment.

Furthermore, for many students the computer-assisted mathematics programs resembled a virtual textbook instead of a resource to improve learning. Many students did not regard technology such as the computer as an artifact or tool to support learning. To them it was not part of their culture of learning hence; they did not know how to utilize the computer-assisted mathematics program into their current frame of reference. Resulting in a few students feeling alienated when the computer was used as a standalone tool for instruction. An introductory lesson was created to illustrate how this new tool could be beneficial in re-learning mathematics. It is important to understand the technology and its place within the classroom rather than just having students learn to use the tool (Lave and Wenger, 1991).

Welcome suggestions

From our discussions, I began to understand what my students endure every Wednesday in the computer-assisted mathematics class. Listening attentively to each students’ concerns we began to identify resources needed to improve the structure of this class. Joseph, Lorna, and Jasmine develop suggestions each week which were implemented in the computer-assisted mathematics class. Suggestions ranged from mini lessons at the beginning of the class to motivate students and include human interaction, huddles at the
tutors’ desk or around a computer regarding a specific mathematics concept, utilizing another interactive computer-assisted program, and for those students who did not like using the computer-assisted program worksheets were provide as they was a workbook to complement the computer-assisted program. Although, these three students help co-develop the curriculum they were always acting in the interest of their peers as they were always concern with how their actions would affect the class. As they articulated in a weekly meeting 'we do not want to impede others learning’ as the class was a diverse group of students with regards to age, ethnicity, culture, gender, and academic ability.

**Affects of cogenerative dialogues**

Cogenerative dialogues allowed my students, the tutor and I to become comfortable in each other’s presence. In the computer-assisted class Sara the tutor indicated that the students became more relaxed and interactive within the class, the material, and their self-esteem improved reducing those conditions that alienated them from learning at the beginning of the course. They were not afraid to tackle difficult mathematics problems or help each other. Peer tutoring which originated from huddles enacted in the computer-assisted class for students having difficulties became a salient feature of both classes illustrating the porous boundaries of the computer-assisted class and teacher-led class. The culture of peer-tutoring got ‘produced, reproduced, and transformed as participants interact within social spaces, and these cultural practices are then available as resources to be accessed and appropriated by participants’ (LaVan, 2004).

In the instructed class and the computer-assisted class there were many moments of humor and laughter as the students, Sara, and I shared stories about our families, places we visited, and laughed at each other without losing cultural or social capital. These conversations were pivotal as they allowed me, the instructor, a chance to get to know the students better and vice versa. I understood my students’ desire and struggles for achieving their high school credentials becoming an insider into their world.

In every classroom the ratio of students to teacher will be always be many to one whereby the students have the most authority. Hence, when a learning environment meets the needs of its participants they will not sabotage their own intellectual development given the exchange payoffs and emotional investments. As the students and I co-created the curriculum for the computer-assisted class their acts of resistance became non-existent and we were able to transform the learning environment to one which was positive and reflective. Students became agentic in the learning of mathematics and developed a new perspective about a subject they did not like or appreciate.

Out of the eleven students who remained, nine scored 410 or higher in the GED predictor test (a test similar to the actual GED test which determines students likelihood of passing the official test) and one student scored the maximum of 800. Two students did not meet the requirement and Jasmine who took part in the cogenerative dialogues was one of the students. Lorna and Joseph the other members of the cogenerative dialogues scored 510 and 410 respectively in their predictor test. On the actual test Lorna and Joseph achieve their goal of obtaining their GED diploma. Lorna scored a 480 the fourth highest mathematics score in the class in addition she obtained the second highest combined score of 2780. Currently Lorna is taking Business Mathematics in the ABE program. Joseph improved on his predictor score by obtaining 450. For both of these students this was a great accomplishment, as they did not like mathematics and felt they were not good at it.

**Conclusion**
Mathematics is a beautiful and powerful discipline. However, only a few discover its beauty and power. It is not an easy subject to teach or learn but, it is worth working at and understanding. As an instructor I try to understand the fears, dreams, failures and successes which shape my students’ world views in the mathematics classroom to ‘help them construct a compelling and in-depth view of the world and their role in it’ (Kincheloe, 2003, pp.21). Utilizing students’ experiences, prior knowledge and perceptions in a collaborative setting offered a more in-depth understanding of how adults learn or re-learn mathematics. Regurgitation of facts, figures, and procedures to solve mathematical problems is not sufficient to learn mathematics. But, re-learning mathematics in a positive, enjoyable, interactive, and collaborative classroom allows students to re-construct their identities as students and learners of mathematics in a community of practice. Maxine Greene (1995) states ‘teaching and learning are matters of breaking through barriers–of expectations, of boredom, of predefinition. To teach … is to provide persons with the knacks and know-how they need in order to teach themselves’ (pp.14). Hence, I end today with a new beginning for adult mathematics education as my students’ voices were heard and change was implemented.

References


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