Metacognitive intervention for the alleviation of learned helplessness

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Dissertation submitted to the Faculty of the Virginia Polytechnic Institute and State University as partial fulfillment of the requirements for the degree of

Doctor of Philosophy
In
Curriculum and Instruction

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November 05th, 2012
Blacksburg, Virginia

Keywords:
Learned Helplessness, self-efficacy, instructional efficacy, academic efficacy, cognition, metacognition, motivation, MUSIC Model of Academic Motivation, professional development, formative and design experiment

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ABSTRACT

The goal of this study was to investigate if participation in collaborative professional development workshops - on learned helplessness, self-efficacy, and metacognition - would impact teachers' beliefs in their capacity to address students' helplessness. The underlying assumption was that, with deeper understanding of the theoretical background upon which instructional practices should be constructed, teachers would develop a stronger belief that, through their pedagogical practices, they could impact students' individual learning outcomes as well as the classroom environment. In order to achieve this endeavor, an eight-week intervention was conducted in a low-achieving and low SES public school in Rio de Janeiro, Brazil.

The study's design, development, implementation, and evaluation were oriented by guidelines derived from the formative and design experiment methodology. The study benefited from quantitative and qualitative data collection and analysis methods. Triangulation of data showed strong consistency between quantitative and qualitative findings. After the intervention, participating teachers acknowledged implementing the theories in their classrooms.

Reported impacts included (a) strengthened teachers' beliefs about their capacity for effective teaching in this school environment; (b) increases in teachers' instructional efficacy and metacognitive abilities; (c) increased capacity to exercise reflective practice through evidence-based self-evaluations; (d) increased capacity to create comprehensive lesson plans including the Nine Events of Instruction (Gagné, 1985), the MUSIC Model of Academic Motivation (Jones, 2009), and metacognitive strategies (Schraw, 1998). As teachers implemented the strategies in their classes, they reported positive impacts on the students' interests, attitudes towards classroom activities, and efforts to achieve.

Dedication

To my father, José Soares Filho, and my mother, Irene Rosa Soares (in memoriam) both of whom, despite being functionally illiterate, ensured that their children had access to formal education. They always supported our development and taught myself and five siblings that *all* is possible for those who believe in God *and* do their part to succeed.

To my daughter and best friend, Selene Soares Williams. Thank you for the consolation and wise advice at hard times, for the exhortations at "naughty" times, but above all, for the unconditional love and caring at *all* times.

To the new generation of strong and successful women who were born in my family after me: Joelma, Adriana, Fabiana, Jozi, Tatiana, Juliana, Tamires, Clara, and Giovanna. In a society where women are expected to educate their children, we have the power and the responsibility to redesign the society. Women like you make me believe in a better future.

Acknowledgements

First and foremost I must thank God for being such a wonderful provider, a loving Father, friend, and counselor. I do not doubt for a second that it was truly through you and I thank you for all the Angels of flesh and blood that you sent to help me every step of the way. This journey made me understand more deeply the meaning of the verse, “The Lord is my shepherd; I shall not want” (Psalm 22:1). Many were the troubles, setbacks, and challenges, but my Lord gave me the strength to keep going until the final victory.

I sincerely acknowledge and thank my family for *all* support. Though far, they made themselves near through prayers and Facebook pictures. Thank you daddy for taking care of my home for me, thank you sisters for taking care of daddy for me, thank you nephews and nieces for showing me that what I am doing has an impact on you. For the time being it is OK for you to look up to me, but very soon I will have to look towards the sky to see you because the sky is your limit.

I thank all of my amazing friends who still cry when they take me to the airport to fly to the US every time I go to Brazil. You make me feel loved; you make me feel like going back. Thank you for the get-togethers, dinner parties, and prayer groups.

I equally thank the friends I made in the US. My friends from Nashville and my friends from Blacksburg who have quickly become a family to me; brothers and sisters from different nationalities, age-groups, skin colors, and creeds. Differences only separate people when you see them with the eyes of your face, but when you use the eyes of the heart, different characteristics complement each other and we all become richer. You have made me a much stronger better person!

My colleagues at Virginia Tech, you have inspired me to keep going, some offered wise advice, and others actually taught me much of what I know now. I will always remember those "serious academic discussions" that always ended in laughter and cookies at the Educational Technology Lab, the papers that we discussed and never wrote, the phone calls of friends informing that there was free food somewhere, the camaraderie that we shared, and the travel plans to visit each other's countries.

Virginia Tech offers some outstanding services that were very important for my success. I will acknowledge three of these services that had a direct contribution to my learning and to the quality of my dissertation document. I will start by recognizing the library services through the person of Heather Morefield-Lang. Her capacity, professionalism, and willingness to help surpassed all of my expectations. Thank you, Dr. Morefield-Lang. Second, I acknowledge the importance of the Faculty Development Institute (FDI) workshops. I came to Virginia Tech to do Instructional Design and Technology and it was at the FDI that I developed the technology skills that I needed most. Thank you, FDI faculty and graduate assistants. Third, I want to recognize the Laboratory of Interdisciplinary Statistical Analysis (LISA) for helping me with quantitative research. Their workshops and one-on-one counseling sessions helped me organize my data and decide which statistical tests and tools were most appropriate for my data. Thank you, LISA. Last, I must recognize the Writing Center for helping me go through my document and correct grammar and punctuation mistakes. Every interaction I had with the Writing Center coaches taught me a lot and made feel more confident about my writing. Special thanks to all Writing Center coaches and staff!

I thank the Virginia Tech faculty for the experiences that made me grow academically and as a person. Wow! You are really good at touching peoples' lives! Your examples made me

reflect very seriously upon my philosophy of education and what kind of professor I intend to become. You made me prove myself every day. This gave me a greater sense of accomplishment.

I thank Maurício Mendes Pinto the School Board Official who first answered my emails and opened the School Board doors for my research. I thank the School board, the school administrators, and the participating teachers for believing in the research and for making it all possible.

I also thank my amazing dissertation committee for the support, valued contributions, and hard work they did to revise my document and make sure I succeeded. Dr. Magliaro, I thank you for being such an incredible role model, for not sugar-coating your comments and contributions, and for instilling that sense of rigor which I needed.

Dr. Tilley-Lubbs, I wish I had met you before. I am glad and grateful to have had you on my committee. Your elegance, sweetness, and easy smile warmed my heart and made me feel safe. Thank you for being so supportive and so serious about pushing me to improve. Thank you for acknowledging my desire to always learn more and more.

Dr. Jones, for me, “caring” was the element of the MUSIC Model of Motivation that was the hardest one to grasp. I thought it was the least tangible concept. But, after you joined my committee and started working *with* me, I realized that caring was the essence of everything that you did. I could understand it and I hope to be able to practice it as well as you do. When I asked you to join my committee, I was targeting your knowledge about the constructs I was dealing with and your experience with quantitative research; however, besides that, I found a genuine human being, patient, humble, approachable. Although there is an abyss between your knowledge and mine I never felt intimidated or ashamed to ask a “silly” question. You never

made me feel bad about my mistakes, on the contrary, each time you recognized my efforts I believed more in my capacity to learn what I needed to succeed. I must also recognize your sense of humor; your comments and the faces you drew on my document made me laugh.

My advisor, friend, role model, and mentor, Dr. Barksdale, nothing I write will do justice to what you mean to me and what you have done for me. Your personality is so striking, your heart is so big, and your laughter is so contagious that there is no chance one will not feel good in your presence. There was not a single day I dragged my feet to meet with my advisor. I looked forward to each one of our appointments and cherished each piece of your wise advice. More than an advisor who takes you through the dissertation process, you were a coach, a co-player, and a cheer leader at the same time. When I felt like my knowledge or strength was thin, I remembered that I was not alone. Some days I was about to break down, I went to see you and I did not have to say much; you just gave me a hug and put my pieces back together. I always left your office feeling better, stronger, accomplished, and more responsible than when I arrived. You will, forever, be part of my life. Thank you! Thank you! Thank you!

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Chapter 1: Introduction

Introduction to the Current State of Brazilian Education

After enduring more than 20 years of a military dictatorship, in 1988, Brazil celebrated the restoration of democracy with a new constitution (Cruz & Monteiro, 2008; Vieira, 2007). One of the most important rights granted by the new citizen-centered constitution concerned education. The constitution contained ten articles with specific guidelines establishing education as an essential pillar of sustainable and equitable development (UNESCO, 2010/11). Since then, government and family have shared the constitutional duty to provide and safeguard all necessary resources and conditions to grant access to free, equitable, and high quality education for every child in every Brazilian municipality (Brazil Const. art. 205-214). Results of a study conducted by the National Institute of Educational Studies and Research (INEP) showed that Brazil had invested more in education than ever before (Cieglinski, 2012). In 2005, Brazil invested 3.9% of its GNP in direct and indirect educational resources. In 2009, the investment reached 5.1% and the plan was to maintain the tendency of sustainable increases of funding to reach 10% of the GNP by the year 2020 (in 2010, Brazil's Gross National Product was R$ 3.675 trillion – the sixth highest GNP in the world, featuring between the United Kingdom and Italy) (IBGE, 2010a). In 2010, the demographic census conducted by the Brazilian Institute of Geography and Statistics found that 97.4% of children aged 7 to 14 were enrolled in school. However, for students between 15 and 17, the enrollment rate decreased to 84.1% (IBGE, 2010b).

Although investments result in quantitative growth, international agencies such as UNESCO warned that Brazil was still far from its constitutional commitment to equitable and quality public education for all (UNESCO, 2010/11). National agencies, institutions, and the

general population share similar concerns about the quality of the education provided by the public school systems. Despite isolated efforts to offer equitable, inclusive, and strong instruction, Brazilian public education still figures among the lowest achieving systems in the world (Barros, Mendonça, Santos & Quintaes, 2001; Menezes-Filho, 2007; Vasconcelos, 2010). Approximately 41% of the students enrolled in the first grade do not even finish middle school (Barros et al., 2001).

Although an agreed-upon definition of "good school quality" cannot be found, most school systems in Brazil determine school quality by combining two important indicators: students' achievement on nation-wide standardized tests and school approval rates (number of students promoted to a subsequent grade at the end of each school year) (INEP, 2009). In 2010, the elementary school approval rate was 86.6%; grade retention was 10.3%; and the dropout rate was 3.1% (IBGE, 2010b). According to Neri (2009) prevailing dropout causes include: (1) lack of interest (40.3%), (2) need to work and help family income (27.1%), (3), other reasons (21.7%), and (4) difficulties getting to school (10.9%). The last four national achievement indices indicate that there has been some improvement in test scores, but public schools have consistently displayed lower achievements than private schools (INEP, 2012; Sampaio & Guimaraes, 2009).

Table 1

Brazil's national achievement index (IDEB) in a continuum from zero to ten.

	2005	2007	2009	2011
Public Elementary Schools	3.8	4.2	4.6	5.0
Public Middle Schools	3.1	3.4	3.6	3.8
Private Elementary & Middle Schools	5.9	6.0	6.4	6.5

Table 2

Achievement index in the Rio de Janeiro municipal school system.

	2005	2007	2009	2011
Public Elementary Schools	4.2	4.5	5.1	5.4
Public Middle Schools	3.7	4.3	3.6	4.4
Private Elementary & Middle Schools	5.7	5.9	5.9	6.3

Table 3

Achievement index of the school where this study was conducted.

	2005	2007	2009	2011
Elementary School	3.2	3.0	3.7	5.7
Middle School	2.4	4.6	3.5	3.9

Perceived causes of low achievements after the universalization of education.

During the two decades after the requirement of a compulsory status for elementary and middle schools, the general perception was that the universalization of education decreased the quality of the education provided by the public school systems (Barros et al., 2001; Menezes-Filho, 2007; Neri, 2009). First, school systems were not prepared to accommodate the sudden increase in numbers of students. Second, not all of these students wanted to be in school or were prepared by their parents to be there. This placed an extra burden on the system and overwhelmed teachers who did not consider themselves trained for the mandates of the new

school environment (Schiebe, 2010). Some researchers suggest that, besides low achievement, the behavioral problems experienced in schools today are also a consequence of compulsory education (Sapateiro, Szymanski & Ragazzan, n.d.). However, other studies, such as Oliveira's (2007) warn against the dangers of attributing responsibility to the students, therefore reflecting a negative view of the universalization of education. The author stresses that great advances were made in the educational field in the last decades. Granting access to education to every school-age child and increasing investments in school resources represent a great leap that needs to be celebrated. He advocates that if the school systems were so much better before, they should have been able to find better ways to include all students without such a dramatic impact on instructional quality. Oliveira (2007) prompts a reflection about the dangers of using a simplistic and unilateral explanation for low achievement. The fixation on only one variable prevents accurate analysis of causation and undermines the search for appropriate and effective solutions.

Other reported causes of low school quality found in the Brazilian literature include: (a) low quality of teacher education programs, (b) lack of motivation to teach, and (c) unattractive career plans (Schiebe, 2010). Schiebe reports that teacher education courses lack quality and do not correspond to the needs of the more complex, fast-paced, and technological demands of the current reality. Most of the teachers in schools today come from public school backgrounds themselves and got their degrees from private higher education institutes (as compared to more prestigious universities). Private institutes are more affordable, offer convenient schedules, and are easy to get through with a diploma. Schiebe (2010) describes teachers as underprepared and unmotivated. Patto (1999) and Forgiarine and Silva (2007) state that the discussion about the causes of low achievement in Brazil are anchored in myths, rather than realities. Some of these myths include the beliefs that (a) disadvantaged children cannot learn, (b) the decrease in quality

of public education was caused by the reorganization of school demographics which resulted from the compulsory status of education, (c) students and families are to blame for low achievements, and (d) there is a lack of teacher motivation and deficient teacher training programs. Saviani (1991) and Forgiarini and Silva (2009) conclude that, rather than blaming external sources for low achievements, schools ought to concentrate efforts on pedagogical practices such as: (a) developing strong teacher-student relationships, (b) implementing more effective teaching methodologies, (c) strengthening curricula, (d) focusing on academic work and on the cognitive development of the students, and (e) evaluation and improvements in school leadership. Rio Municipal School Board Official and coordinator of the Schools of Tomorrow program stated that the effectiveness of the school leadership has had a great impact on the success of the program; "School leadership has made a difference," he says (A. Ramos, personal communication, May 07, 2012).

Soares (2008), coming from a different perspective, congruently with Bandura (1997) and Forgiarine and Silva (2007), suggests that socio-cognitive development should be at the core of school activities. According to Bandura (1997), academic self-efficacy determines most choices that children and adolescents make thereafter, including choice of peers with whom to "hang out," choice of career, and even choice of life partners. Academic self-efficacy impacts assessment of self. Menezes-Filho (2007) also found that parents' schooling was also a contributing factor for student achievement and retention.

As suggested by Oliveira (2007), accurate evaluation of the causes of low achievement may benefit from the consideration of multiple variables that interplay with the number of students in class. However, a recent survey showed that more than 80% of the teachers in Rio de Janeiro and Recife still transfer responsibility for low achievement to the students and their

families (INEP, 2012; O Globo, March 25, 2012). In 2011, while the students completed the standardized tests for the assessment of school quality country-wide, teachers completed a questionnaire that depicted their perceptions of elements that impacted achievement (INEP, 2012). The items that connected responsibility of the school or the teacher with student achievements represented 30% or less of the total responses. The responses of "low salaries that undermine teachers' interest" and "school does not offer opportunities for students' development" represented 30.5% and 27.4% respectively.

Suggestions for improvement.

Suggestions for improvements in education within the Brazilian literature, also finding support in other countries, include: teacher training; development of more attractive career plans to increase teachers' motivation (Schiebe, 2010); a focus on students' cognitive development rather than on behavioral problems (Soares, 2007); and an increase in students' perceptions about the relevance of education (Sapateiro et al., n.d.; Vasconcelos, 2010). With regard to the first suggestion, teacher training, Bandura (1997), Tschannen-Moran et al. (1998), and Thompson et al. (2004) concur that teachers' beliefs about their preparedness to teach define teacher efficacy (preparedness involves both knowledge of subject matter and capacity to employ appropriate teaching strategies). The same authors highlight teacher efficacy as the most essential component of good quality teaching. Instructional efficacy impacts the time teachers spend on planning, the choice of strategies, and expectations of success Bandura, (1987). Schunk and Pajares (2005) affirm that human motivation, actions and behaviors "are based more on what the individual believes than on what is objectively true. Unless the people believe that their action can produce the outcomes they desire they have little incentive to act or to persevere in the face of obstacles"

(p. 86). Training is essential for giving teachers the sense of being capable to organize and deliver effective instruction (Thompson, 2004).

Second, as to motivation, Bandura (1998) affirms that efficacy beliefs are important sources of motivation. The sense of efficacy depends on two types of expectancies: efficacy expectancy and outcome expectancy. Efficacy expectancy represents the individual's beliefs about her capacity to perform the actions necessary to achieve a given outcome, whereas outcome expectancies represent the individual's beliefs that such actions can produce the desired outcome (Bandura, 1979). Instructional efficacy is built upon teachers' beliefs about their own capacity to teach and the belief that their teaching can, indeed, bring about learning (Tschannen-Moran et al., 1998). Efficacious teachers employ more time and make greater efforts to teach students with difficulties (Gibson & Dembo, 1984). Moreover, they vary their teaching strategies more often to reach all students' learning skills and developmental levels, use more innovative techniques, and optimize resources (Ashton & Webb, 1986; Guskey, 1988). Efficacious teachers take responsibility for the final results (Thompson et al., 2004) and they are more likely to foster inquiry-based and student-centered approaches than teachers who dwell in self-doubt about their instructional skills (Czernaik, 1990). The need for increasing teacher efficacy and motivation to teach has been demonstrated in the United States (Pas, Bradshaw, Hershfeldt, & Leaf, 2010), Spain (Beitoret, 2009), Germany, and Syria (Schwarzer & Hallun, 2008), where researchers found that low instructional efficacy precedes teacher burnout.

There is no evidence in the literature that establishes that low teaching efficacy *causes* burnout, but it has been consistently found that "…teachers with lower efficacy also tend to report higher rates of burnout" (Pas et al., 2010). Burnout is described as a psychological condition developed as a consequence of job-related stressors. It is related to emotional

exhaustion, depersonalization (the individual behaves in an automatic way), and personal inefficacy (Maslach, 1976; Maslach & Jackson, 1981). Teachers experiencing burnout develop negative attitudes towards their students, the students' parents, and the workplace (Pas et al., 2010); they believe that they cannot impact students' learning (Maslach, Jackson, & Leiter, 1996); they are often absent from work due to physical or psychological problems (Schonfeld, 2001); and they display performance deficits and higher levels of irritability (Huberman, 1993). Pas et al. (2010) warn that emotional and behavioral changes in teachers' performance and attitudes caused by burnout are associated with low teaching quality, student apathy, and both behavioral and academic problems. Burnout relates to self-efficacy in several ways. For example, low efficacious teachers are more likely to have problems with: classroom management issues; creating a positive classroom environment; and achieving instructional objectives (Friedman & Farber, 1992). This can cause job-related stressors leading to burnout. Conversely, efficacious teachers "feel successful at educating students," and they tend to use more effective strategies to teach, to control behavior, and manage classroom activities (Tschannen-Moran et al., 1998). This diminishes conflicts and job-related stressors. Therefore, one can infer that enhancing teachers' instructional efficacy can be an effective way to increase motivation, promote high quality teaching, produce a positive educational environment, and avoid some of the job-related stressors that are related to teacher burnout.

Lastly, concerning the recommendation of focusing classroom work on students' cognitive development rather than on behavior, three important characteristics must be considered. First, Bandura (1998) stresses that low efficacious teachers tend to spend time on non-academic activities such as behavior control or classroom management than actual teaching. It is important to increase teacher efficacy so that teachers can focus on students' cognitive

development. Effective classes increase students' perceptions of the utility of education and this may result in better student achievement and behavior. Second, school is the most important source of information that students use to build their sense of competence (Bandura, 1997). Teachers need to practice effective teaching in order to provide students with the experiences of success needed to develop a positive sense of competence. Finally, after the family, schools exert the greatest influence on children's development. Warren (2002) stresses that teachers' attitudes have a great impact on students; what teachers *say* and *do* matter. Thus, improving teachers' instructional efficacy and their attitudes towards concentrating work on the students' cognitive development may result in improved student achievement and behavior.

The most interesting thing about these recommendations is that they are *all* related to the performance of the teacher. Most of the studies contemplating low achievement in schools focus on the students; they take into account students' socioeconomic status, gender, racial background, and years of schooling of parents. It is noteworthy that fewer studies address the impact of teachers' expectations and attitudes upon students' achievement (Thompson et al., 2004). In a context where more than 80% of teachers attribute low achievement to students' lack of efforts and lack of parental involvement, it may be useful to look into teachers' attitudes towards their low-achieving students.

Thompson's (2004) work includes several cases, research data, and personal experiences with the purpose of helping teachers increase their efficacy when working with African American students. She stresses that, in environments where there is a social, economic and/or cultural gap between teachers and students, teachers' expectations and attitudes have a great impact on the students' achievement: "Teachers' beliefs affect students' learning" (p. 20). Warren (2002) investigated attitudes of teachers working in low SES schools and found that 70% of the

teachers working with disenfranchised populations had negative beliefs and attitudes about the students and their families. Rosenthal and Jacobson's (1968) seminal work on teachers' expectations demonstrated solidly that teachers' expectations may become self-fulfilling prophesies. This means that teachers' practices are guided by the beliefs they hold about students' capacity or *in*capacity to perform. Therefore, during teaching, they make choices that reflect their beliefs and perpetuate the problem. Brophy and Good (1970) concur that when teachers have low expectations for a student or a group of students, they offer these students fewer opportunities to engage actively in activities, plan less challenging activities for them, push them less, and accept poorer performance as standard for those particular students.

Characteristics of teachers who are likely to blame students for failure.

Understanding the importance of teachers' expectations and attitudes upon student achievements, Thompson, Warren, and Carter (2004) conducted a study in a low-achieving school in Southern California to identify the teachers who were most likely to blame students and their families for low achievement. By identifying the characteristics of the teachers who tended to play the "blaming game" against students and families, the California school could pinpoint expectations and attitudes likely to undermine performance or hinder achievement. They could also create more effective case-specific interventions to address problems.

The population was divided into teachers who blamed students and teachers who blamed parents (although there was much crossover between the two). With regard to the teachers who tended to blame students, 57% of the 121 participating teachers agreed that "When the students fail to pass a test or fail an assignment, they are largely to blame." This statement was used as the criterion variable and other items from the questionnaire were used as predictors of the tendency

to blame students. The nine predictors devised from the study, in order of strength (starting from the strongest) were:

- Teachers who blamed students also blamed parents for failure.
- Teachers who blamed students did not believe that all of their department level colleagues were outstanding educators.
- Teachers who blamed students admitted that they did not treat their students as they would like their children to be treated by their teachers.
- Teachers who blamed students believed that the students did not succeed academically because they did not want to.
- Teachers who were more likely to blame students did not have a graduate degree (masters or doctorate).
- Teachers who blamed students believed that their fellow teachers were outstanding educators.
- Teachers who blamed students believed that they made the curriculum relevant for the students' lives and they also believed that all students have strengths and talents.
- Teachers who blamed students did not allow students to work collaboratively (working collaboratively was important for that school community).

With regard to teachers who blamed parents or guardians, the research method was the same, but the results differed. The statement used as the criterion variable was, "I believe that parents or guardians are largely to blame for students' low achievement." Sixty-four percent of participating teachers agreed with the statement and the eight predictors derived from the study were (in order of strength):

- Teachers who blamed parents also blamed students.

- Teachers who blamed parents and guardians declared that they treated their students in the same way they would want their children to be treated by their teachers.
- Teachers who blamed parents and guardians indicated that they did not want to have more contact with the students' parents.
- Teachers who blamed parents and guardians indicated that they allowed their students to work collaboratively.
- Teachers who blamed parents and guardians believed that students from poor backgrounds did not have the capacity to learn their subject matter and they also believed that they did not receive appropriate training to work with that population.
- Teachers who blamed parents and guardians declared that they would not want their own children to attend that particular school.
- Teachers who blamed parents and guardians affirmed that they did not use multiple strategies to teach their subject matter.

After analyzing results and isolating the negative attitudes that could be detrimental to effective teaching and learning, Thompson et al. (2004) concluded that teachers who are most likely to blame students also tend to contradict themselves and demonstrate a low sense of efficacy. The authors stated that content-specific professional development is essential to strengthen instructional practices and promote attitudinal change. For this purpose, professional development should include:

- specific work to improve teachers' expectations about being able to teach in a particular environment;
- change in teachers' expectations and attitudes towards the students' capacity to learn;
- better understanding of the dynamics of the environment;

- awareness of the importance of teachers' attitudes upon students' achievement; and
- capacity to perform realistic assessment of the impact that teachers' performance, student behavior, and family support can exert on student achievement.

The authors stress that: "…as long as teachers engage in the 'blame game' and refuse to accept responsibility for student achievement, the gap will continue to exist and low SES students and students of color will continue to be subjected to inequality of educational opportunity" (Thompson et al., 2004). Thompson et al.'s (2004) work is congruent with Jones's (2009) MUSIC Model of Academic Motivation which prescribes that teachers should plan their lessons in such a way that (**M**) they can e**M**power students by allowing them to exert some control over their learning; (**U**) inform students about the **U**sefulness of what they are learning; (**S**) promote students' **S**uccess within their developmental level; (**I**) raise students' **I**nterests in the subject matter or, at least, in the topic of that particular lesson; and (**C**) demonstrate that they **C**are about the students' development and success in the discipline.

School environment and the possibility of the presence of learned helplessness.

It has been established that in the school context in Rio:

- teachers are described as underprepared and unmotivated (Schiebe, 2010);
- teachers have a tendency to choose to concentrate attention on students' socio-psychological needs rather than on cognitive development (Forgiarine & Silva, 2009; Soares, 2007);
- students are considered low-achieving, disinterested, disrespectful, aggressive, even violent (Bini & Pabis, 2008);
- achievement has been a constant challenge (Menezes-Filho, 2007);

- students do not perceive the relevance of education (Abramovay & Rua, 2003; Sapateiro, Szymanski & Ragazzan, n.d.); and
- more than 80% of teachers blame the students and their families for underachievement (INEP, 2012). One can reasonably assume that students in low-achieving and low SES schools in the city could be affected by learned helplessness.

In most of the favelas (slums) in Rio, children experience violence on a regular basis (Dowdney, 2003). Drug dealers target children as young as eight years old to work as "mules," for selling and delivering drugs. The local populations in these areas face countless experiences with uncontrollability. Conflicts between opposing gangs and the police are frequent. Moreover, associated with an uncontrollable environment, students have displayed unmotivated behaviors and emotional distress. The students living conditions as described by Dowdney (2003) resemble the conditions described in the learned helplessness literature as being conducive to the development of learned helplessness. Children living in favelas face countless situations that they cannot control; they experience and witness failure on a regular basis. Furthermore, they lack positive role models and do not perceive public education as a possible solution for a better future. Therefore, it is possible that learned helplessness may be affecting the students' performance and behaviors in school. Both apathetic and disruptive behaviors can be a consequence of learned helplessness (Kerr, 2001). These behaviors can denote a maladaptive reaction to the incapacity to exert control over basic life events. Peterson et al. (1993) state that, when individuals fail to exert primary control, they may resort to maladaptive adjustment to the mandates of the environment. As children in the favelas experience violence as a symbol of power and domination (Dowdney, 2003) they may tend to use learned behaviors in efforts to

exert control over the school environment. Further, they may perceive the school environment as a safe place for attempting to find some life control.

Helpless individuals develop cognitive, motivational, and emotional deficits that undermine learning (Dweck, 1975). Regardless of the investments in material resources made by the educational system, the presence of learned helplessness can undermine any possibility of improvement in human performance and/or achievement. Learned helplessness derives from repeated experiences with uncontrollable life events that inevitably lead to failure (Abramson, Seligman & Teasdale, 1978). As experiences of failure lead to expectations of more failure, over time, the individual develops the belief that regardless of anything he does, he will not be able to succeed; therefore, based on expectations of the futility of their efforts, they give up before trying. Helpless individuals may display either apathetic or disruptive behaviors, depending on the kind of attributions they make for failure. Thus, children living in favelas may perceive poverty and low achievement as paired uncontrollable events and learn that, regardless of what they do, they will never have the chance to succeed.

Learned helplessness has already been detected in a public school in Brazil.

Nunes (1990) conducted a study in an urban school in São Paulo to investigate the relationship between school failure, learned helplessness, and depression in 60 second- and third-grade Brazilian girls. Participants' ages ranged from 8 to 12, they all studied in a public school, held low socioeconomic status, and were divided into higher achieving and lower achieving groups. Findings indicated that underachievement was highly associated with students' perceptions of lack of control over life events - both personal and universal helplessness were observed. Depression levels were not statistically significant in that study, but Seligman (1993) posits that children are naturally more resistant to depression than adults. Another piece of

evidence indicating the possibility of the existence of learned helplessness in some Brazilian schools is that Barreto and McManus (1997) affirm that, in the United States, low-income Latino and African American children may be particularly vulnerable to learned helplessness due to greater exposure to chronic levels of neighborhood violence and other uncontrollable life events. Related to their low SES, these children felt that they would never do or have what their better-off peers did and had. The context described in the American study is in many ways analogous to the conditions found in the schools in or around the Brazilian favelas.

Referring back to teachers, who are the subjects of this study, teachers use students' interest, participation, and achievements as sources of instructional efficacy (Bandura, 1998; Tschannen-Moran, Hoy, & Hoy, 1998); So, teachers in low-achieving schools, like the ones in Rio where teachers feel like they cannot exert control over their instructional environment, may be more susceptible to developing low outcome expectancy (Swackhamer, Koellner, Basile, & Kimbrough, 2009) which, over time, may lead to learned helplessness. On the student side, learned helplessness hinders learning due to cognitive, motivational, and emotional deficits; on the teacher side, learned helplessness hinders effective teaching. Bandura (1998) explained that teachers use four sources of information to build their own patterns of outcome expectancy. These sources could include past or present experiences, vicarious learning (observation), verbal persuasion, and physiological reactions. So, when a teacher arrives at school, day after day, and hears other teachers reporting problems regarding student achievement and/or behavior, s/he keeps that information in mind and pairs it with his/her own observations, experiences, and well-being in order to build future expectations. Such expectations affect the way a teacher plans her work, how she teaches, and how she evaluates her performance, as well as that of the students.

Conclusions

Drawing from the findings in the literature and comparing them to the current state of Brazilian education, one can conclude that teachers' expectations, attitudes, and instructional efficacy are essential for improving the quality of education and promoting equality for students of low SES – two major rights granted by the Brazilian constitution. Teachers in Rio believe they have reasons to blame students for their low achievement (INEP, 2012). Researchers such as Forgiarini and Silva (2009), Patto (1999), Saviani (1991), and Schiebe (2010) call for a more responsible position within the school systems. Schools are urged to: concentrate efforts on academic work; focus on students' cognitive development; and provide context-specific professional development so that teachers can develop and utilize more modern and efficient teaching methods, and create stronger school leadership.

Purpose of the Study and Research Questions

This study was designed with the purpose of investigating if participation in professional development workshops on learned helplessness, self-efficacy, and metacognition could impact teachers' beliefs in their capacity to address student learned helplessness. The study was conducted in a municipal elementary/middle school located on the outskirts of a favela, in the suburbs of Rio de Janeiro. Most students live locally, and have low to middle socioeconomic status (SES). The school has demonstrated low achievement for several consecutive years. In the last two years, though, the school has experienced greater achievement due to its participation in the program titled "Schools of Tomorrow." This particular school was chosen for this study due to the alignment of the research goal with the perceived needs of the school community (school

board, school administrators**,** and teachers). A primary question was created to guide the research process.

How does participation in collaborative professional development workshops on learned helplessness, self-efficacy, and metacognition impact teachers' perceived efficacy with regard to their capacity to address students' helplessness?

Three secondary questions were also addressed.

a. What are teachers' beliefs about their own capacity to mitigate learned helplessness before and after the intervention?

b. What are participating teachers' perceptions of the impact of implementing a lesson plan that includes the Nine Events of Instruction (Gagné, 1985), the MUSIC Model of Academic Motivation (Jones, 2009), and metacognitive strategies (Schraw, 1998)?

c. From the beginning to the end of the implementation of the study, will there be a difference in teachers' scores of learned helplessness, instructional efficacy, and metacognition?

Definitions of Terms Used in this Study

Attributional style: Abramson, Seligman, and Teasdale (1978) applied the knowledge acquired from the attributional theories to reformulate the learned helplessness theory so that it could be more appropriate for studies with humans. These researchers realized that helpless individuals did not vary the types of attributions as healthy individuals did. They developed a helpless attributional style and attributed uncontrollable status to perfectly controllable situations. This

was when they also concluded that helplessness can acquire trait-like characteristics and dictate how the individual interprets and reacts to most life events.

Academic self-efficacy: Students' beliefs in their capacity to master academic contents (Bandura 1998)

Catastrophization: Act of magnifying problems by attributing out of proportion importance to events to distort reality (Moritz & Woodward, 2007)

Causal attribution for failure/success: Individuals tentative to explain the reasons for experienced failure or success according to their own perspectives of the happenings (Weiner , Frieze, Kukla, Reed, Rest, & Rosenbaum, 1971)

Cognition: The processes undertaken by the brain when the individual is thinking (Tarricone, 2011)

Cognized: See unified terminology below

Cognitive residue: Knowledge that the individual is not aware of but manifests itself when the occasion for its use materializes. As it is usually formed by subliminal learning, cognitive residue can be negative or positive. Rosenbaum (1972) warns about the biases of cognitive residue derived from the fantasy of fairy tales. However, Salomon, Perkins, and Globerson (1991) describe positive cognitive residue that can be transferred from one environment to another when individuals develop technology skills.

Collective instructional efficacy: Faculty's beliefs about what the group can do together to promote students' learning and school achievement (Bandura, 1993)

***Collective efficacy*:** "…a group's shared belief in its conjoint capabilities to organize and execute the courses of action required to produce given levels of attainment" (Bandura, 1997, p. 477)

Contingency: Essential condition for something to happen. Examples: With regard to learned helplessness, contingency is the presence of objective uncontrollability, or experience of failure to exert personal control (Peterson, Maier, & Seligman, 1993). With regard to self-efficacy, the contingency is the individual's belief in his own capacity to succeed or experience of success (Bandura, 1978), and with regard to metacognition, the contingency is the individual's awareness of the possibility to exert personal control (Flavell, 1979; Reeve & Brown, 1985).

Individual self-efficacy: Beliefs that an individual holds about his own capacity to undertake the actions necessary to produce outcomes (Bandura, 1997)

Efficacy expectancy: Individual's belief that he can perform the actions that may lead to a given outcome (Bandura, 1997)

General teaching efficacy: Teacher's beliefs in his/her capacity to teach despite the interferences of the environment (Tschannen-Moran, Woolfolk-Hoy, & Hoy,1998)

Instructional efficacy: Teachers beliefs in their capacity to bring about learning (Bandura, 1997)

Learned helplessness: (1) Cognitive phenomenon responsible for individuals' beliefs in their lack of capacity to produce desired outcomes (DeVellis, DeVellis, & McCauley, 1978). (2) "Learned helplessness is a reaction to conditions of uncontrollability resulting from the perception or learning that responses and outcomes are independent….The organisms learn that all attempts to solve a problem are an exercise in futility" (Sahoo, 2002, p. 14).

Metacognition: Concerns the knowledge about and awareness of that process that happens when individuals are thinking (Tarricone, 2011). Thinking about thinking (Flavell, 1971, 1979). The ability to understand and manipulate one's thought processes (Reeve & Brown, 1984)

Noncontingency: Perception of independency between efforts and outcomes (Peterson et al., 1993)

Outcome expectancy: Individual's beliefs in the possibility that his actions can result in desired outcomes. Positive outcome expectancy influences the individual's desire to perform the actions that lead to the desired outcomes (Bandura, 1978). Negative outcome expectancy undermines the individual's desire to perform actions that they believe will result in failure.

Personal teacher efficacy: Teacher's beliefs in his/her own capacity to teach, not taking into consideration the influences of the environment but considering that the instructional environment functions within a standard of normality (Tschannen-Moran et al., (1998).

Professional development: "The term professional development means a comprehensive, sustained, and intensive approach to improving teachers' and principals' effectiveness in raising student achievement" (Learning Forward, 2012).

Self-efficacy: "Beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (Bandura, 1997, p. 3).

Terminology used in this study.

Cognized: The terms cognize, cognized, cognizant, and cognizance relate to knowing, understanding, being aware of *(*Merriam-Webster, 2011). It this study, the term cognized is sometimes used to replace the term "conscious" to emphasize the rational component of the

thought process in question. The term conscious is sometimes imprecise because it may imply ethical connotations and perceptions of right and wrong. Perceptions may be impregnated with emotionally attributed meanings. Seligman (2206) explains that maladaptive attributions generate automatic irrational thoughts that cause emotional distress associated with learned helplessness. The disputation exercises that Seligman (2006) suggests for this emotional distress is based on fact-based rational reflections, inasmuch as possible, dissociated from emotional interpretations of reality. Therefore, the term cognized, or cognizant in this study implies rationally articulated understandings, based on factual knowledge or evidence that can be rationally explained. The teachers in this study used this term to describe their approaches to practice, after the workshops, in opposition to their intuitive practices, based on trial and error, before the intervention.

Personal and universal helplessness, efficacy and outcome expectancies, and personal and general instructional efficacy: What Abramson, Seligman, and Teasdale (1978) describe as personal and universal helplessness, Bandura (1978) describes as efficacy expectancy and outcome expectancy; the difference is that helplessness and efficacy are on the opposite ends of the competence continuum. Tschannen-Moran et al.'s (1978) personal teaching efficacy (PTE) corresponds to Bandura's concept of efficacy expectancy; whereas general teaching efficacy (GTE) corresponds to outcome expectancy.

Chapter 2: Literature Review

This chapter consists of a literature review conducted for the purpose of presenting understandings of the phenomenon of learned helplessness, its effects on the teaching and learning processes, and how it can be alleviated. This literature review followed a formative, theory-based, and inductive procedure where previous topics informed the next ones to be examined. The preliminary readings in Chapter one led to the definition of the purpose of the study and indicated that teachers and students in some low achieving schools located in low SES neighborhoods in Rio de Janeiro could be affected by learned helplessness. Students in these schools are more likely to demonstrate disbelief in the relevance of education, display low academic achievement, and higher incidences of discipline problems. Teachers demonstrate low sense of instructional efficacy, disbelief in their capacity to teach that particular population, and lack of responsibility for students' achievement. The preliminary literature review indicates that context-specific professional development designed to improve teacher efficacy, expectations of success, and attitudes towards students can be an effective way to address the teacher-related which may be undermining performance and achievement in these schools. Thus, the first topic examined was learned helplessness.

Learned helplessness was described as being obverse to competence (Sahoo, 2002); therefore, the second topic examined was self-efficacy and instructional efficacy. The purpose was to seek understanding about how helpless individuals can develop a stronger sense of efficacy to alleviate the helpless deficits. As most of the interventions aiming at alleviating helplessness rely heavily on metacognitive processes, metacognition was the third topic explored. However, even though the interventions used metacognitive processes and strategies, the literature did not make an explicit connection between metacognition and the alleviation of learned helplessness. So, one of the indirect contributions of this study was to create an intervention that would make explicit

connections between metacognition and the alleviation of learned helplessness. The last topic examined concerned the appropriateness of professional development workshops as effective teacher training tools, what elements could enhance the effectiveness of short-term workshops, and how that effectiveness could be evaluated.

Learned Helplessness

Development of the construct.

The first concept of learned helplessness informed that subjects exposed to uncontrollable events learned to be helpless (Abramson, Seligman, & Teasdale, 1978; Overmeier, 2002). Subjects learned that their efforts were futile when they attempted to solve a problem and failed each time, despite the efforts they employed (Abramson, Garber, & Seligman, 1980). Therefore, they accepted the aversive conditions without fighting to change the circumstances (Overmeier, 2002).

The construct of learned helplessness was first articulated in the early 1960's while Seligman, Maier, and Overmeier were graduate students at the University of Pennsylvania and were studying the nature of avoidance learning (Overmeier, 2002). Seligman and Overmeier named the phenomenon "learned helplessness" because the subjects learned to be helpless during the course of their initial exposures of failure. Most of the initial experiments consisted of a triadic design with three groups of dogs: a control group that did not receive any treatment; and two groups submitted to some aversive conditions, such as electrical shock (Overmeier & Seligman, 1967; Seligman, 1975). One group could control the conditions to stop the shock (for example, by jumping to the other side of a shuttle box), the other group could not stop the shock, despite several attempts (e.g. jumping, barking). The group taught to stop the shock, not only

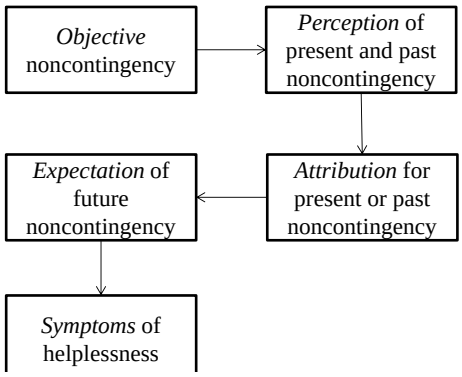
avoided the shock every time, but became more agile; they responded to the aversive stimuli more quickly and more effectively each time. The group that learned that they could not control the administration of the shock stopped trying to escape and endured the shocks without offering any resistance or any response. The passive dogs did not escape, even when presented with the possibility, because they had learned from previous experiences, that their efforts were futile. In 1967, a study conducted by Seligman and Maier, found that it was the perception of uncontrollability that caused the symptoms of helplessness - not the uncontrollability itself, but how the subject perceived it (Maier & Seligman, 1976; Overmeier, 2002).

In 1974 Hiroto, opened the doors for numerous studies using human subjects instead of animals (Hiroto & Seligman, 1975; Peterson, Maier, & Seligman, 1993; Seligman, 1975). However, studies of human helplessness presented some challenges that studies with animals did not consider (Roth, 1980). Drawing from more advanced studies on attributional theories, Abramson, Seligman and Teasdale (1978) published a critiqued and reformulated theory of human helplessness. This reformulated construct held that uncontrollability was, indeed, the essential trigger of learned helplessness; but it better explained how the individual perceived such uncontrollability, what types of attributions they made for failure and the different types of helplessness that could result from such attributions (Abramson et al., 1978). With the contributions of the attributional theories, it was possible to distinguish three dimensions of learned helplessness: internality, generality, and chronicity.

The reformulated theory places greater importance on the cognitive nature of learned helplessness (DeVellis, DeVellis, & McCauley, 1978). The reformulated construct explains that, rather than the experiences with lack of control, it is the attributions that individuals make for such uncontrollability that actually generates learned helplessness. These findings were important for influencing the design of more effective interventions aiming at the reversibility of the symptoms

(Peterson et al., 1993). Previously, most of the interventions prescribed repeated opportunities of control in the form of classical conditioning related to response-reinforcement dependence (Klein & Seligman, 1976). Other researchers had already found that experiences with controllability (or repeated experiences with success) were not enough to reverse helplessness in a sustainable way (Dweck, 1975). Dweck (1975) found that the alleviation of helplessness was more efficient and long-lasting when the intervention paired success with verbal convincement that success was a consequence of efforts. She contributed that success treatment without attributional change was less effective than experiments that included both success and attributional change. After that, Teasdale (1978) confirmed the need for success interventions that include attributional change treatment, adding that present experiences of success are more effective than recalled experiences. In 1978, Bandura published an article in which he proposed the unification of the behavioral change theories through the concept of self-efficacy. In their article, Abramson, Seligman, and Teasdale (1978) acknowledge that their concept of personal and universal helplessness was equivalent to Bandura's (1978) concept of efficacy and outcome expectancy (Abramson et al., 1978). According to the reformulated construct, the dynamics that generate learned helplessness have five consecutive events. Three of these events involve cognitive processes (Abramson et al., Bandura, 1979; DeVellis et al., 1978).

Figure 1. Sequence of events that lead to learned helplessness according to the reformulated construct by Abramson et al. (1978).



Thus, the learned helplessness theory is essential for the understanding of the mechanisms that cause helpless behaviors; however, the self-efficacy theory takes the individual in his current state and elaborates more on how to increase the sense of competence that leads to the alleviation of helpless behaviors. In this sense, the two theories complement each other. Sahoo (2002) states that "learned helplessness is obverse to competence" (p. 24). Learned helplessness and self-efficacy are inversely related; increment in self-efficacy results in automatic decrease of helplessness. Thus, it seems safe to infer that it is possible to address self-efficacy without considering the learned helplessness theory. However, a better understanding of the origin of helpless behaviors may contribute to the identification of more effective strategies to increase and sustain a positive sense of efficacy.

Definition of learned helplessness after 1978.

Learned helplessness is a cognitive phenomenon developed through repeated experiences with uncontrollability paired with maladaptive attributions that lead to expectations of future failure(Abramson et al., 1978, Peterson et al., 1993; Seligman, 2006).. Expectations of future failure generate the perception of futility of efforts and undermine the individual's motivation to start or sustain actions to achieve a desired outcome.

Types of learned helplessness.

The information in the following section on types of helplessness is derived from the seminal article by Abramson, et al. (1978) entitled "Learned helplessness in Humans: Critique and Reformulation" and a book by Peterson et al. (1993) entitled Learned Helplessness: A Theory for the Age of Personal Control; the quotes were extracted from Learned Optimism by Seligman (2006):

Personal and universal helplessness.

Personal helplessness happens when individuals blame themselves for bad events. They believe that they do not possess some of the attributes that other more competent people do. They make internal attributions for failure, such as lack of intelligence, lack of knowledge, or lack of talents. Whenever they succeed, personally helpless individuals tend to make external attributions for success; if they fail, it's their fault; if they succeed, it's because something or someone else contributed. Personal helplessness implies low self-esteem because it involves judgments of self-worth derived from unrealistic comparisons of "self" with other individuals. The individual believes that situations that are unsolvable for *him*, due to *his* lack of internal resources, are not unsolvable for more capable individuals. This type of helplessness causes greater apathy and depression. It can be the case of a woman who is "abandoned" by her husband and thinks that he left her because she is not interesting enough, not bright enough, nor attractive enough. From her perspective, she is to blame for her husband's attitudes because she did not have whatever it took to protect her marriage. Personal helplessness relates to Rotter's (1968) theory of internal locus of control and Bandura's (1978) concept of efficacy expectancy. Internal attributions cause personalization, the individual thinks he is the central cause of bad events; everything is somehow related to the self. These people are always asking "what have I done?", "why have they done this to me?" "everything happens to me," it is always about me."

Universal helplessness happens when individuals blame others for bad events. They make external attributions for failure. Universal helpless individuals do not blame themselves; therefore, they do not develop low self-esteem. They do not compare themselves with other individuals; they compare conditions involving the situation that generated failure. For instance, a woman who is left by her husband and makes external attributions for the event may think that

the reasons why her husband left were that this fate runs in the family, there are high divorce rates nowadays - it was just a matter of time before her marriage expired.

Both types of helplessness are caused by the individual's incapacity to perceive the objective connection between one's actions (efforts) and the consequences of such actions (outcomes); both cause individuals to believe in their incapacity to exercise control; both cause beliefs in the futility of efforts, generate low resilience in face of difficulties, and provoke emotional distress. However, unlike personal helplessness that causes depression and apathy, universal helplessness may generate aggressive, disruptive, or angry behaviors towards what or whoever the individuals believe to be the reason for their failure. An accurate and balanced capacity to make internal or external attributions is essential for the development of a sense of responsibility. Individuals who make inaccurate external attributions for failure cannot take responsibility for their actions. Universal helplessness is also related to Rotter's (1968) theory of external locus of control and Bandura's (1978) concept of outcome expectancy.

Transient and chronic helplessness.

Transient helplessness happens when individuals make temporary attributions for bad events. Transient helplessness can be personal or universal, global or specific, but it affects the individual for a short period of time. Any normal human being can be helpless after a traumatic event, but they develop effective coping mechanisms, bounce back, and recover. Helpless individuals do not bounce back. Instead of coping, they resort to maladaptive adjustments to the conditions of the environment. Seligman (2006) explains that:

> Failure makes everyone at least *momentarily* helpless. It is like a punch in the stomach. It hurts but it goes away – for some people almost instantly. For others, the hurt lasts; it seethes, it roils, it congeals into a grudge. They remain helpless for days or perhaps months, even after only small setbacks. After major defeats they may never come back (p. 45).

Chronic helplessness happens when individuals make permanent attribution for bad events. Permanent attributions cause long-lasting helplessness, whereas transient attributions foster resilience. Permanent attributions may cause overgeneralization. Individuals who have a tendency to overgeneralize may take one isolated occurrence of a bad event and attribute the negative consequences of that event across other similar or dissimilar situations. Individuals who expect bad events to have permanent consequences or happen recurrently think in terms of "never" and "always", an optimistic person thinks in terms of "sometimes" and "lately". For example, if a person plans to go to the beach on the weekend and she wakes up on Saturday to realize it is raining, she could overgeneralize by saying that it *always* rains - *every time* she plans to go to the beach. Seligman (2006) states that:

> People who give up easily believe the causes of the bad events that happen to them are permanent: The bad events will persist, will always be there to affect their lives. People who resist helplessness believe the causes of bad events are temporary (p. 44) … People who believe good events have permanent causes try even harder after they have succeeded, people who see temporary causes for good events may give up even when they succeed, believing success is a fluke (p. 46).

Specific and global helplessness.

Specific helplessness concerns one particular area of the person's life. For instance, this could be the case if a woman is left by her husband and develops helplessness with regards to personal relationships only, but does not let that affect other areas of her life. She may still feel that she is a successful mother, professional, or sportsperson. Global helplessness happens when helpless deficits generalize across several areas of the person's life, similar or dissimilar to the situation that generated helplessness in the first place. People who make universal attributions have a tendency to catastrophize the consequences of bad events. When a bad event strikes in one area of the person's life, she thinks that life is over and every other area is affected. A good

example is a man who loses his job and feels like he will never get another job, either because he does not think he has the necessary qualification for the current market (internal attributions) or because the economic situation is bad and there are no jobs available (external attributions). Then, he does not bother to look for a job, feels miserable because he cannot support his family, ends up having erectile dysfunction because he thinks that a man who cannot support his family is a lesser man, then, he resorts to drinking, and becomes a lousy father - one bad event triggers others and leads to a catastrophe. Seligman (2006) explains:

> Some people can put their troubles nearly into a box and go about their lives even when one important aspect of it – their job, for example, or their love life – is suffering. Others bleed all over everything. They catastrophize. When one thread of their lives snaps, the whole fabric unravels(p. 46).

Common characteristics of learned helplessness.

The permanence (transient or chronic), pervasiveness (specific or global), and internality (personal or universal) of helplessness may generate three common characteristics: Overgeneralization, catastrophization, and personalization. First, overgeneralization is caused by universal attributions for bad events (Seligman, 2006). The individual takes one happening, one bad event, one bad experience and assumes that all experiences related to that particular situation will have the same outcome. These people tend to communicate in absolute terms; instead of saying *some, this situation, perhaps,* they say *all, every, always, never, there is no alternative, there is no exception*. Example, *all* men are jerks, *all* students in this school are underachieving, the educational system is *all* wrong, (all) low SES parents do not participate in their children's academic life.

Second, catastrophization is a tendency to magnify consequences of failure out of proportion and make a catastrophe out of manageable situations (Peterson et al., 1993). Catastrophization consists of exacerbated beliefs that something is worse than it really is. For

example, helpless and non-helpless individuals would react rather differently if they made one mistake at work. People who are not helpless, when they make a mistake at work, have a positive attitude towards the situation; they tend to think that making mistakes is not a good thing, but humans make mistakes. They take actions to correct the mistake, learn from it, and do not make the same mistake repeatedly. They will become better employees and have successful careers. But, above all, they do not transfer responsibility to others and can feel better about themselves. Helpless individuals may catastrophize after a single mistake by thinking that they have "screwed up." They expect to be fired, and doubt that they will ever make a solid career anywhere. When helpless individuals look into the future, they anticipate that "*all*" things are going to go wrong (Seligman, 2006). Catastrophization generates rumination, which stands for individuals' incapacity to suppress or divert attention from a given problem. A study focusing on the effects of catastrophization on disability caused by chronic pain among Brazilians found strong correlation between catastrophization of pain and disability caused by chronic pain (Junior, Nicholas, Pereira, Pimenta, Asghari & Cruz, 2008). The authors explain that, although physical pain may have real physiopathological roots, psychological factors influence the intensity of pain, impact individuals' response to pain, and affect daily functioning. "Catastrophization thoughts are the main predictor of physical disability, stress, pain intensity, and inadequate responses to treatment" (Junior et al., 2008). The study found that the Brazilian mean for catastrophization was slightly higher than previous findings elsewhere.

Third, personalization is a tendency to place self in the center of all problems (Seligman, 2006, Peterson et al., 1993). The person perceives everything that happens as being related to her. Balanced personalization is essential for well-being. A person who thinks "she didn't talk to me because she doesn't like me" feels different about herself than a person who thinks "she

didn't talk to me because she didn't notice I was here, she may have been really distracted by something else." People who develop the tendency of personalizing bad events have low self-esteem. "They think they are worthless, talentless, and unlovable" (Seligman, 2006, p. 49). People who make internal, permanent, and global attributions for bad events are more susceptible to catastrophization, overgeneralization, and personalization.

Learned helplessness deficits.

Learned helplessness deficits affect the individual's cognitive, motivational, and emotional states (Abramson et al., 1978): First, the cognitive deficit consists of the individuals' incapacity to perceive effort-reinforcement dependency (Abramson et al., 1978; Bandura, 1978; DeVellis et al., 1978; Abramson et al, 1980; Seligman, 1975; Roth, 1980, Peterson, 1993). Helpless individuals believe that, regardless of their efforts, they will not achieve the desired outcomes. Sahoo (2002) adds that helpless individuals display "associational deficiencies" (p.14). They fail to perceive the association between a new stimulus and appropriate response. Sahoo (2002, p. 15) stresses that this condition makes the acquisition of new skills "impossible for helpless individuals". Second, motivational deficits cause individuals to give up even before trying. Helpless individuals believe that regardless of their efforts, outcomes are always random (Dweck, 1975; Diener & Dweck, 1978). In the event that they are initially motivated, they have difficulties self-regulating and keeping a course of action in the face of difficulties (Bandura, 1977, 1978; 1993, 1997). They have little resilience or capacity to pursue goal-oriented tasks and self-regulate (Zimmerman (1989, 1990, 2002). Third, the emotional deficit is demonstrated through symptoms of depression generated by the individual's perception of lack of control (Abramson et al., 1978; Maier & Seligman, 1976; Sahoo, 2002; Seligman, 2006).Individuals who develop personal helplessness have more severe depression and apathy, whereas individuals

who develop universal helplessness may display disruptive, aggressive, and violent behaviors (Kerr, 2001).

Components and symptoms of learned helplessness.

Peterson et al. (1993) caution that, in order to be considered (labeled) helpless, the individual must display deficits that relate to all three components of learned helplessness: Contingency, cognition, and behavior. "Contingency refers to the objective relationship between the person's action and the outcomes that she then experiences. The contingency here is uncontrollability" (p. 8). It represents the perception of disconnect between actions and the consequences of such actions. This efforts-outcome independency is called noncontingency. The cognition component refers to the individual's reaction to the experience of uncontrollability, how the person perceives, reacts to, and explains the noncontingency (Peterson et al., 1993). This cognitive process has three stages: First, individuals perceive the noncontingency and attribute an uncontrollable status to it. Second, the individual elaborates a causal explanation for the uncontrollability. The behavior component refers to the person's reactions to noncontingency (Peterson et al., 1993). Helpless individuals display passive, pessimistic, and unmotivated behaviors. Peterson et al., (1993, p. 8) explain that "the individual's expectations of future helplessness may cause cognitive retardation, low self-esteem, sadness, loss of aggression, immune changes, and physical illness."

Depending on the type and degree of helplessness, individuals may demonstrate the following symptoms in a higher or lower degree (Diener & Dweck, 1978; Dweck 1999; Peterson et al., 1993): lack of motivation, poor problem-solving skills, lack of initiative, lack of persistence, fear to start new tasks, dependence on others, low resilience, need for prompts or

examples more often than other individuals, reluctance to make choices of their own, social withdrawal, depression, use of negative language to describe self and skills, belief that the problem lies in them, and passive aggressive behavior. Kerr (2001) highlights that, in academic settings, helplessness manifests itself as low self-efficacy, low self-esteem, low performance, low curiosity, low expectations, low engagement level, lack of motivation, lack of persistency, and lack of willingness to take risks. The author adds that helplessness can sometimes be expressed through stealing, truancy, avoidance, anger, overt aggressiveness, and violence.

State and trait status of learned helplessness.

Helplessness is a learned state (DeVellis et al., 1978; Maier & Seligman 1976; Overmeier & Seligman, 1967). Nevertheless, depending on its permanence, pervasiveness, and internality learned helplessness can escalate from a temporary *state* to a *personality trait*, becoming the lens through which the individual views, interprets, and reacts to life events (O'Leary, Donovan, Cysewski & Chaney, 1977; Sahoo, 2002). Individuals who develop personal, global and chronic helplessness may display behaviors that denote a trait-like status of helplessness (Abramson et al., 1980; Hiroto & Seligman, 1975; O'Leary et al., 1977). Personality traits are structures of habit within the individual's psychological structure. They guide the formation of a mental template that generates a tendency to behave in a particular, identifiable, and predictable way (Allport, 1937; Matthews, Deary &Whiteman, 2003).

Reversibility of learned helplessness.

Learned helplessness can be unlearned or reversed (Abramson et al., 1978, Abramson et al., 1980; Dweck, 1975; O'Leary et al., 1977; Peterson et al., 1993). Peterson et al. (1993) stress that: "People can be immunized against the effects of uncontrollable events by providing them

with previous experiences with controllability" (p. 111). Klein and Seligman (1976) concur that learned helplessness deficits can be reversed by means of therapies designed to make individuals perceive the connection between their actions and the outcomes they produce. However, the most prevalent method employed to reverse learned helplessness involves repeated opportunities of success (Bandura, 1977, 1978, 1997; Dweck, 1975; 1999; Teasdale, 1978). Experiences of success are used to disconfirm the predictability of failure installed by learned helplessness (Abramson et al., 1980; Bandura, 1978; Donovan & Leavitt, 1985; Dweck, 1975). Concrete evidences of success are "inconsistent with the individual's belief of personal incompetence" (Abramson et al., 1980). Disconfirmation of expectations of failure is "the most efficient means of reversing all of the various dysfunctional cognitive processes" that generate helplessness (Hollon & Garber, 1988, p. 193). Success interventions manipulate the environment to avoid aversive outcomes (failure) and make success feasible and attainable through personal efforts (Abramson et al., 1980). Peterson et al. (1993) state that concrete experiences of success paired with accurate attributions for the contingency between efforts and outcomes have the power to fight overgeneralization, catastrophization, and personalization. The same affirmative is found in the works of DeVellis et al. (1978), Abramson et al. (1980), Klein and Seligman (1976), Peterson et al. (1993), and Roth (1980). Bandura (1978) states that learned helplessness can be decreased through enhanced expectations of efficacy. The sense of personal efficacy, derived from experiences of success, generates expectations of future efficacy, leading to higher motivation to start and sustain action. According to Bandura (1977, 1978, 1997), personal exposure to success and tangible evidences of personal competence acquired through enactive mastery are the most effective sources of self-efficacy.

Experiences of success may not be enough for alleviating learned helplessness.

With greater emphasis given to the cognitive nature of learned helplessness, interventions started to include more than experiences of success - they added elements that fostered more accurate attributions, expectations, and perceptions of personal control (Donovan & Leavitt, 1985; Dweck, 1975; Hirt & Genshaft, 1981; Holon & Garber, 1988; Weiner, 1985; Weiner & Litman-Adizes, 1980). In education, Dweck (1975) found that success interventions, combined with conscious identification of the procedural causes of success, were more effective and long-lasting than success interventions alone. Students who perceived that efforts rather than ability caused success could understand the connection between their actions and the results they produced. Bandura (1978) and Holon and Garber (1988) agree that successful performances can induce and alter cognitive events and promote expectations of future success. Zimmermann (1989) proposed a theory of learned hope*ful*ness based on empowerment and control. His research indicates that students who are given the opportunity to learn new skills and develop a sense of personal control demonstrate less debilitating effects of learned helplessness. He adds that "experiences that provide opportunities to enhance perceived control will help individuals cope with stress and solve problems in their personal lives." Other viable ways to decrease helplessness are special skills training and the desensitization of automatic thoughts (Gillham et al., 2007; Seligman, 2006).

John Teasdale (1978) contributes that present experiences of success are more powerful in alleviating helplessness than recalled ones. Teasdale's studies confirm Diener and Dweck's (1978) findings that once helpless individuals face adversity, they forget past experiences of success. Diener and Dweck (1978) gave a set of 12 problems to two groups of students. Group one consisted of helpless students and group two consisted of mastery-oriented students. The

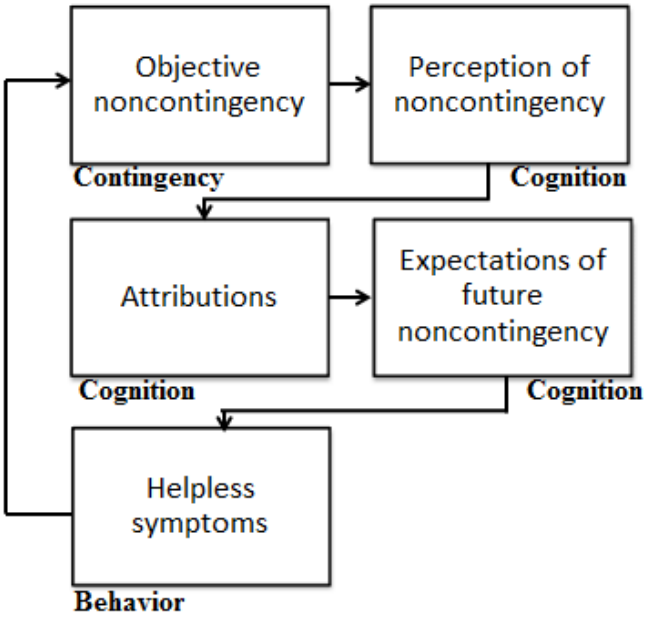
problems given to both groups were the same. Eight out of the twelve problems were solvable and four were above the developmental level of both groups. Both groups solved the eight problems equally correctly and within the same time range. However, when the two groups started having problems with the unsolvable problems, the differences between mastery-oriented and helpless students became evident. In the face of difficulties, the mastery-oriented students intensified their efforts and attention, used self-talk to reassure themselves of their ability, gave self-instructions, and changed strategies effectively. Conversely, the helpless students quickly started to blame their intellect for failure. They used self-talk to denigrate themselves, and engaged in distracting and avoidant behaviors to disguise their incapacity to perform. Helpless students said to themselves: “I guess I am not very smart,” “I never did have a good memory,” “I am no good at things like this”, even though their intelligence and memory were working. When asked how many problems they had solved successfully, the mastery-oriented students were accurate in recalling about eight out of twelve. The helpless individuals underestimated their success and estimated a maximum of six right and six wrong answers. When asked if they believed they could succeed in solving the same problems at a later time, all mastery-oriented students replied positively, whereas one third of the helpless students did not believe they would be able to solve the same problems in the future.

Learned helplessness and personal control.

Since the first articulation of the theory in 1967, until its reformulation in 1978, there has been a consensus among researchers that uncontrollability is the antecedent of learned helplessness (Abramson et al., 1978; Meier & Seligman, 1976; Overmeier & Seligman 1967; Peterson et al., 1993; Sahoo, 2002). Uncontrollability is the originating element in the sequence of events that cause helplessness. First, the individual experiences objective uncontrollability,

then he perceives the uncontrollable event as a noncontingency, makes expectations of future noncontingency, and finally, displays helpless symptoms. In 1991, as cited in Peterson at al., (1993), Peterson and Villanova undertook a meta-analysis of hundreds of studies involving learned helplessness and concluded that, indeed, the individuals' experiences with uncontrollable events disrupted their performance during tasks.

Figure 2. Sequence of events that leads to learned helplessness based on Abramson et al. (1978) associated with the three components of the theory as described in Peterson et al., 1993): Contingency, cognition, and behavior.



At this point one can wonder: Why is lack of control so disabling? Why is control so important? Ralph Schwarzer (1992) states that control is crucial for human functioning: "Human functioning is facilitated by a personal sense of control. If people believe that they can take action to solve a problem instrumentally, they become more inclined to do so and feel more committed to this decision" (p. 1). Schwarzer is not alone; the literature on personal control describes control as inborn drive (Deci & Ryan, 1985 Ryan & Deci, 2000). "…an intrinsic

necessity of life" (Adler, 1956, cited in Bandura, 1997, p. 16). Skinner (1995) states that human beings have a natural propensity to motivation and a necessity to feel competent. Rothbaum, Weisz and Snyder (1982) distinguish between primary and secondary control. Primary control refers to the individual's ability to manipulate the environment in order to achieve his own goals. Secondary control is the individual's ability to align his "self" with the environment. According to Peterson et al. (1993), the individual's beliefs about control influence the ability to respond to bad events. Rothbaum et al., (1982) suggest that when individuals experience uncontrollability, they first attempt to respond within the primary control realm. They try to control the environment to "get what they want," but when they fail, they automatically resort to secondary control. Then, they succumb to the conditions of the environment, regardless of how aversive those conditions may be. Bandura (1997) adds that when individuals fail to exert primary control, they adapt to the existing reality as a way to ameliorate distress and "lessen the negative emotional impact of crushing defeats" (p. 29).

McCarthy and Newcomb (1991, p. 40) suggest that intentional cognitive conditioning followed by behavioral response is an essential strategy to control thoughts and cope with stress. Stressors can be reduced and even eliminated by (a) changing thoughts with respect to the stressor and (b) acting upon such stressors. For example, a woman who thinks her husband is not paying enough attention to her may be tempted to think that she is boring, uninteresting, and that he does not love her anymore - maybe he has another woman. The rumination of such thoughts can escalate to catastrophization without any factual evidence to support beliefs. However, if the woman had the ability to intentionally control her negative thoughts at their onset, she would be able to dispute such thoughts and not jump to conclusions that were not based on reasonable facts. The next step, after controlling the originating thoughts, would be to take action. In this

example, the woman might talk to the husband about her perception of his behavior. She might find out that his behavior was based on an unexpected reason. Maybe he was acting differently because he was sick, worried about his job, or he might have thought that she preferred to be left alone. Peterson et al. (1993) confirm that helpless individuals who have a tendency to catastrophize, overgeneralize, and personalize interpret life events through only one prism. These thoughts are usually irrational and emotionally generated. Disputation, fact-based reflection, and reality-testing interventions are effective methods to alleviate these symptoms (Seligman, 2006; Wells, 2008).

Identification of signs of helplessness in the classroom.

Teachers may be the first individuals to identify learned helplessness symptoms in their students. They have the motives, the opportunities, and the means to do so. Fincham and Hokoda (1989) conducted a study which confirmed teacher observation as a valid way of identifying learned helplessness in students. In their study, they compared the effectiveness of self-reported, teacher-reported, and instrument-measured helplessness and concluded that teacher observation was, almost always, as accurate as psychometric tests. Fincham and Hokoda's (1989) conclusions seem logical because teachers spend as much time with the students as their families. Teachers get students involved in activities that require cognitive processing, motivation, and attentiveness. As highlighted by Peterson et al. (1993), to be considered helpless a student must display symptoms related to contingency, cognitions, and behaviors. Teachers, more than anyone else, have access to information about the students' contingencies (school tasks and standards, family problems, school-related difficulties), cognitions (students' beliefs about what caused the success or failure of the task), and behaviors (indicative of motivational

and emotional state). All of this makes teachers the most capable individuals to evaluate students' cognitive, motivational, and emotional states on a regular basis.

Learned helplessness and low socioeconomic status (SES).

Low SES students are more susceptible to learned helplessness because they experience more situations that they cannot control (noncontingencies) than higher SES peers (Bradley & Corwyn, 2002; Fincham & Hokoda, 1987). Low SES students tend to make external attributions for success and internal attributions for failure; they perceive social success as less internal and stable than higher SES students; they fear social rejection and may prefer social withdrawal, therefore, they may set avoidant goals and make attributions that resemble learned helpless children (Fincham & Hokoda, 1987). Stern (1986) affirms that emotional and motivational deficits associated with disengagement, dissatisfaction with school, and disenfranchisement can defeat even students who do not have learning disabilities. Students with low SES backgrounds have a tendency of performing below children from higher SES on tests of intelligence, language proficiency, and academic achievement (Bradley & Corwin, 2002; Kishiyama, Boyce, Jimenez, Perry & Knight, 2008). Experiences of failure over time attributed to lack of ability may result in the development of learned helplessness (Abramson, 1978; Dweck, 1975). Research on student attrition indicates that feelings of not belonging, low self-efficacy, low self-confidence, low self-esteem, lack of efforts, endemic apathy, and boredom are strong indicators of student dropout (ACT, 2004; Deschamps, 1992; Ganim, 1990; Hammond, Linton, Smink, Drew, National Dropout Prevention Center, & Communities in Schools, 2007; Stern 1986, Tinto, 1999). The combination of low SES, low achievement, and motivational and emotional deficits are the main causes of student dropout (ACT 2004; Bowen, Chingos, & McPhearson, 2009; Deschamps, 1992; Ganim, 1990). Low SES, associated with low achievement, is the single best predictor of

dropout (Stern 1986). Thus, helping teachers develop the knowledge, skills and tools to address learned helplessness may be essential to promote student retention in low SES areas. Education is essential for the development of human capital, equality of opportunities, and social mobility for breaking a cycle of staggering consequences for the individual and society (Bowen et al., 2009).

Figure 3. Elements that prevent the development of human capital and cause social immobility

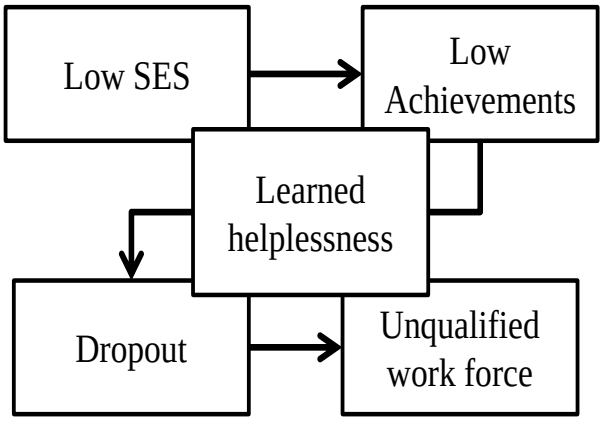


Figure 3. This figure illustrates the interplay of some conditions that can trigger the development of learned helplessness in low SES individuals. However, after installed learned helplessness becomes the cause of further stagnation that jeopardizes development at both the individual and societal level.

Collective learned helplessness.

When individuals share common experiences with uncontrollability, "the group as a whole, acts in a helpless fashion; they fail to solve problems readily mastered by other groups not previously exposed to uncontrollability" (Peterson et al., 1993, p. 112. Collective control represents the group's shared beliefs of what the group can achieve (Peterson & Sunkard, 1989; Simkin, Lederer, & Seligman, 1983). Beliefs in lack of collective control produce "low morale, lack of perseverance in the face of failure, little tolerance of interruptions and turnover, and poor

physical health" (Peterson et al., 1993, p. 262). Group helplessness is not directly associated with individual helplessness. A group is not helpless because the individual members are helpless. Individuals who do not have individual helplessness may display helpless behavior when participating with a helpless group. An individual may see himself as capable of performing at the individual level, but feel incapable or unwilling to do something to help the group when they believe that that group is incapable of performing. Group helplessness does not seem to cause depression because group individuals tend to make external attributions for helplessness. When they compare themselves to other group members they realize that, despite personal differences, group members are equally incapable of producing desired outcomes, so they feel comfortable about their low performance (Peterson et al., 1993).

Simkin et al., (1983) have not been able to detect generalization of helplessness, neither from helpless groups to individuals, or from helpless individuals to groups. Peterson et al., (1993) argue that, although research has not been able to document generalization of individual-group or group-individual helplessness, individual and group helplessness do influence each other because (1) group efficiency is measured by the capacity of its members to perform in an efficient fashion, and (2) individuals rely on the functionality of their group to measure their own efficacy. Group helplessness is generated by vicarious observation more often than is individual helplessness. Group helplessness "challenges the notion that helplessness is produced by trauma per se" (Peterson et al., p. 113). In a professional environment, for example, a novice member of the group, trying to learn from the older members, may pay attention to events that either produce desirable rewards, or avoid undesirable consequences. So, by observing other members of the group failing to solve problems (undesirable consequence), the novice learns the futility of the partner's actions and learns to be helpless by observation. This person will give up before

trying to solve problems that they have already observed others fail to resolve. Based on the scarce literature on collective helplessness, one can infer that effective interventions aiming at the alleviation of group helplessness should occur in the collective realm and not on the individual level, since collective helplessness is associated with low outcome expectancy rather than efficacy expectancy.

Self-Efficacy

Bandura (1977, 1978, 1993, 1997) describes self-efficacy as the person's beliefs in her capacity to organize and execute the course of actions required to produce a given outcome. Self-efficacy influences (1) one's volition to initiate action, (2) resilience to sustain efforts in face of adversities, and (3) decisions to employ the right amount of time and efforts for the attainment of a given goal. Self-efficacy is not an innate trait. It is developed through expectations of future success. Perceived self-efficacy (congruently with the learned helplessness theory) consists of a causal relationship between behavior and outcomes. Expectations of success serve as incentive for the initiation and sustainability of motivation; whereas, expectations of failure serve as disincentives. Bandura (1997) explains that:

> Outcomes arise from actions…The outcomes people anticipate depend largely on their judgments of how well they will be able to perform in given situations (p.21). Successes build a robust belief in one's personal efficacy. Failures undermine it, especially if failures occur before a sense of efficacy is firmly established (p. 80).

Self-efficacy consists of two types of expectancies: efficacy expectancies are related to the individuals' beliefs in his personal capacity to undertake the particular actions necessary to achieve a given outcome; whereas, outcome expectancies are related to the individual's beliefs that his actions may produce the desired outcome (Bandura, 1978). Efficacy and outcome expectancies may be independent from one another but both impact motivation to initiate and

sustain a course of actions (Bandura, 1997). For example, a teacher who believes in his capacity to teach, in his knowledge of the subject matter, and teaching strategies may have high efficacy expectations and yet fail to perform if he believes that his actions will not produce the desired outcomes for reasons beyond his control. In other words, if the teacher believes that the students' cannot learn, or the environment is disruptive, and nobody can teach in such an environment, the teacher's high efficacy expectancies will not impact his expectations of achieving success.

Sources of outcome and efficacy expectations.

There are three major sources of outcome expectations (Bandura, 1977, 1978, 1997): (a) Physical effects: pleasure or pain, food, and physical health, for example; (b) Social effects: approval, social recognition, rejection, penalties; and (c) Self-evaluative reaction: one's own judgment of self. The dynamics involving outcome expectations work in such a way that self-efficacy beliefs guide performance and predict outcomes.

Efficacy expectations have different dimensions: they may vary in magnitude, generality and strength (Bandura, 1977, 1978). Magnitude means that individuals' self-efficacy may be bolder or weaker according to the perceived degree of difficulty and threats the task may offer. Generality means that expectancy of efficacy is circumscribed to one situation. In other cases, it may generalize to affect different areas of the individuals' life. Strength refers to weak and strong expectations of efficacy. Weak efficacy makes individuals give up quickly in the face of adversity and strong efficacy makes individuals persist and develop effective coping strategies in face of adversities.

Sources of information used for the construction of the sense of efficacy.

Individuals can resort to four sources of information to build their sense of efficacy (Bandura, 1977, 1978, 1997): enactive mastery experience; vicarious experience; verbal persuasion; and psychological and affective states. Enactive mastery experiences involve the individual's actual performance. It is the most powerful source of self-efficacy because it provides authentic and concrete evidence of the individual's capacity to overcome difficulties, strategize, and implement changes to succeed. Enactive mastery provides concrete undisputed evidence of competence which challenges and disproves the perception of incompetence installed by learned helplessness (Brown & Inouye, 1978; Driscoll, 2005; Garber & Seligman, 1978).

Vicarious observation is another source of self-efficacy information (Bandura, 1977, 1978, 1997). It consists of an individual's observation of other peoples' performances (modeling) and the reinforcements associated with such performance. Through social comparative inference, healthy individuals can raise their own efficacy expectations by comparing themselves to other individuals. Vicarious experiences motivate individuals to engage in actions in order to achieve the same rewards and benefits that the individual has observed others receive or avoid the punishments previously applied to others. The observation of others' performances gives the individual a hint as to how well they think they can perform. Modeling is especially useful in situations perceived as aversive or risky. For example, an individual who is pathologically afraid of snakes may find that, seeing another person handle a snake (modeling) is a safer way to cope with his/her phobia than handling the snake himself (enactive mastery). Modeling is safer, less demanding, less threatening, and less stressful than enactive mastery.

The third source of self-efficacy is verbal persuasion. Individuals are influenced by what they hear form others. Positive verbal persuasion promotes self-affirming beliefs, which the individual can use when facing difficulties; they affect the amount of efforts and the resilience in face of difficulties. Verbal persuasion, in the form of praise, may be a weaker way to boost self-efficacy than enactive mastery or modeling, but it has a powerful effect if used as sequential attributional feedback for performance (Bandura, 1997; Schunk, 1984). Verbal persuasion does not work if the individual does not possess the skills necessary to accomplish the task. Bandura warns that rather than wishful thinking, self-efficacy beliefs can only be devised from factual evidence:

> Simply saying that one is capable is not necessarily self-convincing. Self-efficacy beliefs are the product of a complex of self-persuasion that relies on cognitive processing of diverse sources of efficacy information conveyed enactively, vicariously, socially and psychologically. Once formed, efficacy beliefs contribute significantly to the level and quality of human functioning (Bandura 1995, p. 11).

The fourth and last source of self-efficacy is psychological and affective state (Bandura, 1977, 1978, 1993, 1998). People perceive their self-efficacy with regards to how relaxed or stressed they feel when performing a given task. As fear arousal and stress are unpleasant feelings that people usually try to avoid, people tend to believe that their capacity to perform is affected by how they feel. When they feel well doing something, they believe that they must be good at it. Lack of skills, hostile or inappropriate environment, or fear and stress during the task, may generate an altered psychological and emotional state that instills a sense of dysfunctionality. Negative feelings diminish expectations of efficacy. Only individuals with high self-efficacy have the tendency to choose careers where they need to operate precisely and efficiently under high amounts of stress and responsibility. Low efficacious individuals tend to avoid challenges and responsibilities (Bandura, 1987).

Development of self-efficacy beliefs.

Self-efficacy originates from a series of beliefs about personal control that start at a very early stage and dynamically adjust themselves throughout the individuals' life: "Each period of development brings with it new competency requirements and challenges for coping efficacy" (Bandura 1997, p. 177). Efficacy beliefs affect performance more than ability (Bandura 1997). Collins (1982 as cited in Bandura, 1998) conducted a study in which one group of equally able students was divided into groups according to their beliefs about their mathematics skills. The findings indicated that children who had high ability beliefs about mathematics made more accurate choices of strategies, solved more problems, chose to rework more on those questions they failed, made more accurate choices of what problems needed reworking, demonstrated more interest in mathematics, and had more positive attitudes towards the study of mathematics. Since the students in both groups were selected for participating in the research due to having demonstrated equal mathematics intellectual ability, the observed difference in performance was attributed to their unrealistic beliefs on their capacity to master mathematics problems.

The first people to influence individuals' self-knowledge are the parents and immediate family (Bandura, 1997). Children create beliefs about "selves" from what they hear others say about them. Babies start to put their capabilities to test the moment they have to strive to control the flux of milk that comes to their mouths. Because babies and young children are dependent on adults for basic needs, such as feeding, clothing, comforting, and entertainment, children learn that they have to do something, to behave in a certain way, or to produce some verbal sounds to get people to do what they cannot do by themselves. Children who grow up in an environment that stimulates mastery experiences develop a more accurate sense of efficacy from an early stage.

The second influence on individuals' self-knowledge comes from more competent peers (Bandura, 1997, Vygotsky, 1962). More competent age-similar peers are important because they inform the individual about what he should know, how he should behave, and what is expected from him; provide feedback on performance; and teach them how to correct or improve performance. Peers also provide points of reference against which, the individual can compare his own performance and evaluate his capabilities. Social comparison is especially important in vicarious social learning (Bandura 1997). Students learn a great deal from one another, peers not only model performance and behavior, but also "publicly label, rank, and discuss with one another how smart their classmates are" (Bandura 1997, p. 234). Peer modeling has several important functions. For example, students learn skills from more competent peers; even in cases when skills are not explicitly taught, by observing the performance of others, students can appraise their own capacity to perform. Peer-modeling, associated with explanations of how to do things has the most powerful tutoring effect. Thus, school activities provide the greatest influence on individuals' beliefs about competence (Bandura, 1997). The dynamics of individual-group social interactions, typical of school environments, influences individual and group identity and sense of competence. School provides social validation for students' personal appraisal of psychomotor, cognitive, and social capabilities. Bandura (1997) stresses that although schools should strive to provide opportunities for students to grow socially and psychologically, cognitive efficacy is the greatest contribution that schools can give to individuals and the society. Therefore, it is essential that students not only understand, but take advantage of the schooling experience, to develop a positive sense of efficacy.

Academic self-efficacy.

Students who believe in their capacity to master academic content and exert control over their learning experience less peer rejection, display greater self-confidence, and more pro-social behaviors (Bandura, 1997). Students with low academic efficacy struggle with self-doubt and may choose isolation, excluding themselves from some social circles. They are afraid of exposing their incapacity to perform therefore, they tend to develop avoidant, aggressive, and transgressive behaviors. Bandura (1997) warns that, "The negative impact of perceived cognitive inefficacy on the course of social development becomes stronger as children grow older and gravitate to peer groups that can get them into all kinds of trouble" (p. 176). Later in life, academic self-efficacy also determines the individuals' career and choice of significant other, which affect the type and quality of their lives forever. Bandura's (1997) and Soares's (2008) works lead one to conclude that schools cannot neglect the important role of offering safe and stimulating environments for students' psycho-social development. Both Bandura (1997) and Soares (2008) concur that the defining function of the school is to provide opportunities for individuals to develop cognitive competencies and intellectual skills. One can conclude that this understanding is important for different reasons. First, academic self-efficacy impacts lifelong choices. Second, individuals may not find in any other environment outside school the opportunities to develop and validate their sense of competence and efficacy. Lastly, the development of intellectual skills is the main reason for schools to exist. If teachers act mainly as psychologists and social workers, who is going to do the teaching business?

Instructional efficacy.

Instructional efficacy relates to teachers' beliefs in their capacity to organize and deliver instruction in a way to bring about learning. Instructional efficacy not only affects general beliefs about education, but also determines teaching practices (Bandura, 1997). Teachers with high instructional self-efficacy believe that, with some extra efforts and appropriate teaching strategies, they can teach even the most difficult students (Gibson & Dembo, 1984). They believe that their teaching approach can compensate for lack of family support and negative community influences. They believe that they can control their teaching methods and adapt their classroom practices to reach the academic needs of the students. Gibson and Dembo (1984) found that high efficacious teachers devote more time to class preparation, provide more guidance to struggling students, vary teaching strategies according to the students' needs, have high expectations for students, high standards for themselves, and praise students' for their academic achievements more than low efficacious teachers. Efficacious teachers' practices are congruent with Brunner's statement that, "any subject can be taught effectively in some intellectually honest form to any child at any stage of development" (Bruner, 1977, p. 33). However, this intellectually honest way requires commitment contributed with quality teaching, reflective practice, and motivation to teach (Bandura, 1997).

Teachers who lack in instructional efficacy believe that they cannot do their jobs if the students are unmotivated, if the teacher's job is not supported by the students' families or neighborhood environments, and/or if they do not have appropriate material resources (Bandura, 1997). They are pessimistic about the students' motivation, they doubt their capacity to control students' behaviors, and tend to apply punishment and sanctions to persuade students to perform (Woolfolk & Hoy, 1990. Melby (1995) found that teachers with low self-efficacy reported that if

they could go back in time, they would not choose the teaching career again. They make external causal attributions for bad results. Their conversations demonstrate that they employ more time and attention focusing on the difficulties and impediments to good teaching rather than in discussing solutions for good teaching. Gibson and Dembo's (1984) study reported that low self-efficacious teachers (1) spent more of their teaching time on non-academic activities, (2) showed impatience with struggling students, (3) criticized students for their failures, and (4) prescribed easy activities based on performance, rather than mastery goals. Teachers' attitudes affect students' motivation to learn (Kipnis, 1974). Bandura (1997) affirms that:

> A teacher's sense of efficacy is likely to be essentially influential on young children because their beliefs about their capabilities are still relatively unstable, peer structures are relatively informal, and young children make little use of social comparison information in evaluating their capabilities (p. 242).

Teachers' sources of self-efficacy information.

Bandura (1998) asserts that teachers develop self-efficacy beliefs based on: (1) verbal encouragement (verbal persuasion) of significant others, colleagues, supervisors, and administrators; (2) observation of peers who serve as models of success or failure (vicarious experience); (3) personal experiences of success or failure (mastery); and (4) emotional or psychological arousal caused by anticipation of results during planning, feelings of stress or well-being while teaching. Vicarious experiences are especially important as subliminal sources of learning when novice teachers mimic more experienced teachers' good and bad practices. Some authors divide instructional efficacy into Personal Teaching Efficacy (PTE) and General Teaching efficacy (GTE) (Swackhamer, Koellner, Basile, & Kimbrough, 2009; Tschannen-Moran et al., 1998). PTE relates to Bandura's efficacy expectations and GTE relates to outcome expectancies. PTE represents teachers' beliefs in their capacity to teach taking into account that

the instructional environment is conducive to teaching and learning. GTE represents teachers' beliefs in their capacity to teach regardless of the environment. Teachers with high GTE believe they can adapt their instruction and select effective strategies to teach even the most disruptive students; they take responsibility for teaching their students regardless of their background or family situation.

Collective school efficacy.

Collective efficacy is "a group's shared belief in its conjoint capabilities to organize and execute the courses of action required to produce given levels of attainment" (Bandura, 1997, p. 477). Bandura (1993) states that group performance can be predicted through members' collective beliefs of efficacy. Dynamic and coordinated interactions among group members produce results that are greater than the sum of the achievements of each member. Collective efficacy does not mean that every group member must have the same opinion about the group's functioning, or the same abilities, competences, and interests. Bandura (1997) warns that although great levels of disagreement can be unproductive, diversity "serves a useful purpose in setting challenging group goals, devising appropriate strategies to realize them, and building the social consensus to sustain the level of effort needed to succeed" (p. 479).

Collective instructional efficacy derives from teachers' beliefs about what they can do together to promote students' learning and school achievements (Bandura, 1993). Although teachers seem to operate in an isolated fashion in their classrooms, they assume the identity of the group and respond according to the expectations set for the group (Bandura, 1997). Crucial for collective instructional efficacy is to get teachers to work as a team. Teachers' practices and achievements are not isolated; school teachers actually belong to a community of practice that shares similar characteristics and, together, produce the school's results. Teachers' individual

and collective self-efficacy affect students' learning and school achievements in general (Bandura, 1997; Gibson & Dembo, 1984). On the other hand, adverse socio economic "realities can affect the students' educability and impair the school environment" (Bandura, 1997, p. 243). Students disciplinary problems have escalated from "making noise, running in the halls, and chewing gum," in the 1940s to "drug and alcohol abuse, assault and vandalism, extortion, pregnancy, gang warfare, and rape," in the 1980s (Bandura, 1997, p. 243). Disciplinary problems affect low efficacious teachers who have a tendency to make external attributions for bad results (Peterson et al, 1993). Bandura (1997) informs that collective efficacy instills a naturally positive environment in which every participant considers each other a valued contributor to the shared results, believes that together they can achieve results that they would not be able to achieve individually, takes responsibilities with the group results, empowers all members to grow together, builds on each other strengths and diverse talents, spends more time with academic discussions and academic work, regards teaching and learning as their shared goal, works at the best of their abilities believing the success of the team, and shares solutions and rewards. Bandura (1997) suggests that interventions to enhance collective efficacy should focus on eliminating differences in the beliefs of individual members of the group with regard the capacity of the group; for a team to display and operate in high collective efficacy mode, group members need to believe in the conjoint capacity of the group, despite their beliefs in their individual capacity. Low self-efficacious individuals need to believe in the group as well as believing in themselves (Bandura, 1978, 1993, 1997).

Cultural influences on individual and collective efficacy.

Individualistic and collective societal orientations cause different expectations of efficacy when individuals work in a group (Bandura, 1997). Individualistic systems, like the United

States, offer plenty of opportunities for personal development, value personal initiatives, and reward personal success. Collectivist systems, such as Israel, regard collective welfare as preceding individual interests, associate individual rewards with group achievements, and foster shared responsibility of citizens (Bandura, 1997). The downside of collectivist societies is that individuals can develop a corporative interdependence which can prevent the identification of individual performance deficits. Individualistic societies have a tendency to foster personal efficacy; whereas collectivist societies foster collective efficacy. Individuals who grow up in individualistic societies report greater sense of efficacy when working by themselves, whereas individuals from collectivist societies report greater sense of efficacy when working with a team or with another individual. Bandura (1997) affirms that "Regardless of cultural background, employees achieve the greatest sense of personal efficacy and productivity gains when training is congruent with their personal orientations than when it is discordant" (p. 471).

Attitudes of efficacious schools.

Bandura (1997) explains that changes in student behavior and attitudes towards education are not the only problems that teachers have had to juggle with in the last few decades. School systems in several countries seem to have been plagued with heavy workloads, high responsibility with accountability, low level of autonomy, bureaucratic practices, bad school leadership, lack of resources, low salaries, low occupational status, and low public recognition of accomplishments (Bandura, 1997). All of these conditions have direct impacts on teacher efficacy and motivation to teach. Despite all of these truths about the hardships of the enterprise of teaching, some schools and districts still display high levels of achievement. The evaluation of high achieving schools usually takes into account the students' background, ethnicity, socioeconomic status, and other factors that may indicate that the school's achievement did not

occur due to the students' previous academic achievements. Schools are considered high achieving when their results come from their pedagogical practices. Measurement of school achievements is usually based on rate of absenteeism, behavior problems, and academic achievement in standardized tests. Bandura (1997) contributes that some common characteristics among most high achieving schools include:

> …strong academic leadership by the principal, high academic standards with firm belief in student's capabilities to fulfill them, mastery oriented instruction that enables students to exercise control over their academic performances, good management of classroom behavior conductive to learning, and parental support and involvement in their children's schooling (p. 244).

Cognitive processing and Self-efficacy.

Self-efficacy affects the way people think. "Efficacy beliefs affect thought patterns that can enhance or undermine performance" (Bandura, 1997, p.116). Behavior is indicative of cognitive processing; it is regulated by aforethought and cognized goals. Expectation of efficacy is associated with the individual's self-appraisal and believed-upon capabilities. Low self-efficacious individuals fear new situations and face challenges as threats because they focus on their perceived deficiencies, rather than on talents or strengths. They experience more stress and anxiety that can undermine their cognitive processing. They visualize failure scenarios and spend precious time with self-doubt. Bandura (1997, citing Powel, 1973) affirms that "visualizing successful actions improves performances; imagining faulty ones impairs them" (p. 117). Beliefs are the essence of self-efficacy. Besides having the ability to perform, individuals need to believe that they can organize and orchestrate cognitive, social, emotional, and behavioral sub-skills in order to be able to operationalize specific courses of actions to produce the desired outcomes. Bandura, 1997 adds that "perceived self-efficacy is concerned not with the number of skills you have, but what you believe you can do with what you have under a variety of circumstances"

(Bandura, 1998, p. 37). Actions, emotions, and behaviors start in the mind and are externalized through observable behaviors.

Metacognition

Metacognition is broadly defined as "thinking about thinking," and the regulation of thoughts (Duffy, Miller, Parsons, and Melloth, 2009; Flavell, 1971, 1976, 1977, 1979; Kluwe, 1982; Reeve & Brown, 1984;). Schraw (1998) and Tarricone (2011) acknowledge that the broadness of scope, imprecision of terminology, and lack of a unified and clear definition of what metacognition is, and what it is not, makes it a difficult concept to grasp. It is sometimes hard to distinguish cognition from *meta*-cognition. Meta-cognition is a compound noun, formed by the word "cognition" preceded by the Greek suffix "meta," which means about, "akin to," "behind," or "beyond" (Tarricone, 2011, p. 1). The consensus is that cognition refers to the processes undertaken by the brain when the individual is thinking, whereas metacognition concerns the awareness of such processes, rather than the processes themselves (Brown 1975; Flavell, 1971, 1979; Reeve & Brown, 1984; Tarricone, 2011; Williams & Atkins, 2009). Schraw (1998) explains that "cognitive skills are necessary to perform a task, while metacognitive skills are necessary to understand how the task was performed" (page1). Metacognition is also described as a set of thinking "tools for the craft of schooling" (Paris & Winograd, 1990). Driscoll (2005) explains that metacognition is the exercise of control of one's cognitive processes. It subsumes knowledge about the cognitive processes and capacity to monitor and control them. Reflecting upon these statements, one can wonder if the lack of clarity detected by Tarricone (2011), is not caused by the fact that the literature on metacognition implies knowledge of the cognitive information processing system but does not explicitly address it. If metacognition means "about cognition," the knowledge of the trajectory of the information in the

human mind, and the cognitive processes undertaken in each phase of that trajectory, is essential for the understanding and ability to control such processes.

Metacognition develops from theory to practice.

Flavell and Brown are considered the first articulators of the metacognitive theory as a construct (Kluwe, 1982; Sternberg, 2009). Flavell was the first researcher to focus on the active monitoring, regulation, and orchestration of cognitive processes as metacognitive functions in the early1970s (Brown, 1975; Kluwe, 1982). In the 1970s, most of the metacognitive research consisted of theory-oriented studies undertaken by developmental psychologists (Dunlosky & Nelson, 1992; Nelson, 1998). In the 1980s, more widespread knowledge of cognitive theories allowed the development of more sophisticated methodologies for analyzing metacognitions. In the 1990s, the focus of metacognitive research shifted from metacognitive knowledge to metacognitive monitoring and control. This generated more practice-oriented studies. In the first decade of 2000, metacognitive practice reached a vast array of subject matter. The Handbook of Metacognition in Education, edited by Hacker, Dunlosky and Graesser (2009), is an example of the diversity of fields that are now benefitting from metacognition. The Handbook features 22 articles reporting successful interventions in a variety of fields, including literacy, reading comprehension, writing, science, mathematics, meta-comprehension, meta-memory, individual differences, self-regulated learning, technology, tutoring, and measurement of metacognition.

Definitions of metacognition.

Flavell (1971, 1976, 1977, 1979) describes metacognition as a very broad construct that includes the individuals' beliefs, perceptions, and attitudes towards their own thought process. It concerns one's awareness of his own cognitive processes, *anything* related to such processes, and

the products that derive from them. Reeve and Brown (1984) define metacognition as the "individuals' ability to understand and manipulate their own cognitive processes" (p. 343). Flavell's and Brown's seminal works provide background knowledge for more current definitions (Schraw, 1998; Tarricone, 2011). Livingston (1997) describes metacognition as "a higher-order cognitive procedure involving active control over the processes engaged in learning" (p. 1). Levine (2002) contributes that metacognition includes knowledge about cognitions and skills that individuals can use before, during, and after a task to maximize performance. The author explains that these skills work as practical tools that allow the individual to plan how to approach a given task, to decide which strategies are available, and determine which ones are more effective for a given situation. They help the individual monitor comprehension by self-reviewing previous knowledge, calculating learning gaps, evaluating progress towards a goal, locating help, and assessing performance. Some of the higher-order thinking skills subsumed under the metacognitive label are reflection, self-reflection, self-assessment, self-regulation, decision-making, planning, predicting, checking, reality-testing, evaluating, tracking, coordinating, and controlling deliberate attempts to learn or solve problems (McKeown & Beck, 2009; Reeve & Brown, 1984; Schraw, 1998).

Metacognition and personal control.

Kluwe's (1982) definition of metacognition is congruent with Flavell's (1976, 1979) and Reeve and Brown's (1984); however, when he states that "the thinking subject …may act as the causal agent of his own thinking" (p. 202), he approaches the learner through the Cartesian concept of "Cogito, Ergo Sum." Thinking patterns do not just happen to the person - they are generated and articulated by the person's perceptions and choices. Thinking does not happen because one exists; one exists in the proportion of his thinking (Kluwe, 1982). Bandura (1997)

concurs that it is not a random pre-determined thinking pattern that determines who we are. It is who we believe we are that determines how we think. This perspective provides a greater sense of personal control. If it is the person who determines how she thinks and how she acts in the world, with appropriate mind tools, one can decide to think differently, and therefore, act and feel differently as well.

Seligman (1980; 2006) affirms that depressed people generate pessimistic thoughts, whereas healthy people generate optimistic thoughts. He advocates that it is possible to change how people feel by changing how they think. Therefore, one can infer that superior metacognitive awareness and control can help the individual develop accurate understanding of his thinking patterns and prevent the maladaptive attributions that cause learned helplessness. Wells (2008) states that, through a process called metacognitive reality testing, therapists can help individuals reflect upon the accuracy of the cognitive processes they are engaging in. They can perceive the assertiveness of their attributional style and learn strategies to change them when necessary. Changes in thinking patterns cause change in emotions and behaviors. Holder, Whetstone, and Sheinker (2008) describe the thinking subject as a metacognitive person:

> A thinking person is a self-regulated person. Such a person is in charge of his or her own social behavior and uses a variety of metacognitive strategies to define and solve problems. When faced with life situations that cannot be solved by prior knowledge or automatic responses, a thinking person activates metacognitive behavior. Time, energy, and thought are monitored and evaluated to select the most appropriate behavior or action for the situation (p.1).

Components of metacognition.

Metacognition comprises metacognitive knowledge, sometimes referred to as metacognitive awareness, and metacognitive regulation (Hacker et al., 2009). Awareness refers to what the individual knows about his cognitive processing or about cognitions in general;

regulation refers to the knowledge of strategies used to monitor and control thought processes. Flavell (1976) refers to metacognitive regulation in terms of metacognitive *strategies*. Reeve and Brown (1984) use the term metacognitive *skills*. Kluwe (1982) prefers *executive processes*.

Metacognitive knowledge.

Metacognitive knowledge consists of three distinct types of knowledge (Grabe & Grabe 2007; Schraw, 1988;): (a) *Declarative knowledge*, basically factual knowledge about something. It can be demonstrated by verbal accounts of things or processes. (b) *Procedural knowledge* involves knowing how to perform the steps of a task. It can be demonstrated by actual performance. (c) *Conditional knowledge* involves judgment of when and why one should apply declarative and procedural knowledge. Declarative knowledge concerns *what*; procedural knowledge concerns *how*; and conditional knowledge concerns *why, when, and what for* (Thiede, Griffin, Wiley & Redford, 2009; Tobias & Everson, 2009). Awareness of types of knowledge can be useful to help teachers decide on delivery strategies, types of practice, and assessment, in accordance with the demands of the subject being taught.

Metacognitive knowledge includes: (a) knowledge about self - the individual knows how his brain works, and has awareness of his strengths and weaknesses; (b) task knowledge – the individual knows the task objectives, the prior knowledge necessary to perform the task, sequence of sub tasks, degree of difficulty and etc.; and (c) strategic knowledge - the individual knows a set of strategies that can be used to maximize strengths and compensate for weaknesses. Strategic knowledge also helps individuals evaluate the effectiveness of the strategies in use and control changes during performance.

Metacognitive Regulation.

Metacognitive regulation encompasses the monitoring and control of cognitions. It subsumes awareness of the flow of the cognitive process in which the person is engaged (Schraw, 1995, 1998; Serra & Metcalfe, 2009; Thiede et al., 2009; Tobias & Everson, 2009). It involves planning for the task, monitoring progress during the development of the task, and evaluating results after the task. Among the three components of metacognition (awareness, monitoring, and control), accurate monitoring is viewed as having the greatest impact on learning. It represents a constant self-evaluation process that allows individuals to distinguish between what they know from what they still need to learn (Driscoll, 2005). In other words, it allows accurate identification of what one already knows and what needs to be learned. Accurate monitoring allows students to concentrate efforts to learn what is in the learning gap that Vygotsky (1962) calls the zone of proximal development. Hacker et al. (2009) refer to cognitive monitoring as metacognition in action. Kluwe (1982) considers monitoring to be the core of metacognition. Monitoring involves regulatory processes, such as awareness, planning, coordinating, revising, predicting, controlling, checking, reality testing, and evaluation (Reeve & Brown, 1984; Tarricone, 2011).

Metacognitive control is any action taken as a response to metacognitive monitoring (Serra & Metcalfe, 2009; Thiede et al., 2009; Tobias & Everson, 2009). Its purpose is to maintain or redirect actions to ensure the successful accomplishment of the task; control of cognitive processing is contingent upon the individual's metacognitive functioning (Brown, 1975, Flavell, 1971, 1979; Reeve & Brown, 1984). Cognitive control begins to emerge in middle childhood, around third grade, and should be greatly developed by the sixth grade (Bereiter & Scardamalia, 1987; Flavell, 1981; Reeve & Brown, 1984; Schraw, 1998). In normal physical,

psychological, and environmental conditions, as children grow, they naturally increase their ability to exert control over their cognitive processes and become better problem-solvers (Brown, 1982; Flavell, 1971, 1976, 1977, 1979; Reeve & Brown, 1975).

Metacognition and the cognitive information processing theory.

Reeve and Brown (1984) explain that metacognitive theory stems from the cognitive processing theory. This theory postulates that the cognitive system is equipped with a central processor, analogous to that of a computer (Mckeown & Beck, 2009). The central processor is viewed as *executive control* because it controls all human thoughts, actions, and emotions. Executive control is responsible for planning, monitoring, checking, and regulating problem-solving behavior (Brown, 1975; Driscoll, 2005; Reeve & Brown, 1984). According to the Cognitive Information Processing Theory, learning occurs when new knowledge is stored in the permanent memory and the individual can transfer that knowledge to other situations that are dissimilar to the context in which the new knowledge was learned (Driscoll, 2005). From the moment the information reaches the individual's senses, until the moment that information is stored in the permanent memory, it goes through a trajectory in which it is processed through three types of memory. These three memories represent three stages of the information processing: sensory memory; short-term memory (working memory); and long term-memory. At each of these stages, there are a series of mental processes that the brain needs to carry out before the information moves on to the next stage. Most mental processes can be controlled by the individual (Brown, 1975, 1982, Reeve & Brown, 1984). The individual is "an active problem-solver and processor of information, rather than passive reactor to environmental stimuli" (Reeve & Brown 1984, p. 345). Gagné et al. (2005) affirm that "metacognitive control processes ... select and set in motion cognitive strategies relevant to learning and remembering….Individuals

may exercise control over attention, over the encoding of incoming information, and over the retrieval of what has been stored" (p. 195). Metacognition concerns the understanding of these mental processes, as well as the knowledge of appropriate strategies that can enhance processing or compensate for flaws during specific processes. These processes can be translated into observable behaviors. So, by observing student behavior during a task, teachers can infer what thoughts are being processed in the student's mind and adjust instruction accordingly.

At this point, one can conclude that the quality of learning depends on the precision and efficiency of these mental processes. The role of teaching is to make sure these processes happen in a satisfactory way so learning can be produced. In a natural environment, learning may simply occur (Vygotsky, 1962). In a classroom, most learning must be intentionally produced. Like a factory where the machinery is the brain, the production plan is the instructional practice, and the product is learning; the teacher is the mastermind of the entire process – the engineer who knows the machinery well enough to program it and adjust its functioning, so the final product is produced in accordance with the standards in scope, time, and quality. Thus, knowledge of the cognitive information processing system should be pre-requisite to the understanding and application of metacognition. By knowing the specific cognitive processes that happen during learning and their functions in the learning system, teachers can design effective instruction to impact specific processes according to their instructional goals. They can predict difficulties and provide support and remediation. If teachers and students cannot understand, monitor, and control these processes, they cannot make effective use of *meta*-cognition. Reeve and Brown (1984) concur when they cite Flavell: "Flavell's view, then, is that metacognitive processes can only be effective if an individual consciously controls them" (p. 347). Nevertheless, in order to consciously control cognitive processes, the individual needs to know (a) what the processes are,

(b) how they function, (c) how they translate into observable behavior, (d) how they can be impacted through external interventions, and (e) how the impact of interventions can be evaluated.

Knowledge of the information processing system is essential for teachers who intend to incorporate metacognition in their practices (Gagné et al., 2005; Reeve & Brown, 1984). Imagine a teacher who knows that:

- pattern recognition happens in the sensory memory,
- sensory memory is very limited in time and capacity,
- selective attention is essential for the individual to focus on new stimulus and allow the information to move on to the working memory,
- the sensory memory can only retain four units of information for ¼ of a second - in that infamous time, the individual's selective attention needs to decide if the stimulus is useless and can be discarded or if it is eligible to move on to the working memory to be further processed; and
- the two main factors that influence this quick decision are the individual's interests and the usefulness of the subject.

This teacher would have the capacity to consciously organize and present instruction in way to attract students' attention, raise their interest, and demonstrate the usefulness of the instruction, since these actions would impact the processes that are undertaken in the sensory memory. Once the information moves on to the working memory, where most learning really happens, the executive control will "turn on" a series of processors that, when combined, allow learning to happen. It is in the working memory that stimuli are semantically encoded and temporarily stored in mental folders within the individual's schemata (Driscoll, 2005). The

individual will attribute meanings to the information, compare new knowledge to existing knowledge, and assimilate or accommodate the new information (Piaget, 1969). Depending on the meanings attributed to the information, it will be stored in a specific "folder;" if the individual can relate the new information to prior knowledge, the information will be placed in a that pre-existing mental folder. Our mental folder system is in some ways comparable to a file cabinet with drawers, folders, and documents. If a topic is new or cannot be related immediately related to any prior knowledge, a new folder will be opened, labeled, and placed in some drawer of the file cabinet. The working memory also has time and capacity constraints. It can only retain around seven items for up to 30 seconds. At this point, one can conclude that teachers who understand the cognitive processing system and learn how to manipulate instruction in order to enhance the effectiveness of the students' thought processes during learning will perceive the need to:

- *make explicit connections* between new knowledge and prior knowledge,
- *chunk* the content into smaller manageable units to compensate for limited storage capacity and provide several opportunities of rehearsal to compensate for limited time capacity,
- *compare new knowledge with prior knowledge* and possibly develop different understandings that facilitate decision making about where and how to file the new information, and
- *use diverse strategies* to appeal to students' different learning strengths and weaknesses.

After all the processing which happens in the working memory, the individual's executive control will make a final decision as to permanent storage (Driscoll 2005). This

decision is influenced by several factors. The decisive factors, however, concern the individual's personal interest in the subject, his perception of utility of the information, and his confidence in his capacity to master the information or perform the actions required for learning (Bandura, 1997; Jones, 2009; Keller, 1988). The long-term memory does not have any limitation of time or capacity; however, the information will only be useful if the individual learns how, when, and why to use it in the situation in which it was learned, as well as in dissimilar situations where it can apply. Knowing this, the teacher will understand the importance of including assessment of learning and transfer opportunities after each activity to ensure the individual will be able to locate the information, retrieve it when necessary, and transfer it to a diverse array of contexts in which the information may apply (Driscoll, 2005; Gagné, 1985; Gagné & Bolles, 1959; Gagné et al., 2005; Piaget, 1969). In summary, a truly metacognitive teacher knows these processes and has the ability to design instruction to impact, evaluate, monitor, and control them. Therefore, awareness of the cognitive information processing system and metacognitive capacity to plan, organize, monitor, and evaluate instructional strategies to enhance students' processing of information may give teachers a greater sense of control, strengthen instructional efficacy, and generate expectations of success in bringing about desired outcomes.

Gagné's nine events of instruction.

Among all instructional models derived from the cognitive information processing theory, Gagné's nine events of instruction is the one that follows the specific steps of the processes undertaken by the brain during learning. Since the early 1960's, several cognitive and socio-cognitive instructional theories and models were developed; The Systematic Design of Instruction, Ausubel's Meaningful Reception Learning, Situated Cognition, and Robert Gagné's Theory of Instruction are some of them (Driscoll, 2005). The objective of Gagné's Nine Events

of Instruction is to mimic and facilitate the flow of natural learning. It is a structured model, more consistent with guided than discovery learning (Gagné et al., 2005). However, advocates of guided learning defend that this method is preferable for students in lower school levels or students with learning difficulties (Clark, Kirshner, & Sweller, 2012). If, on one hand, discovery learning raises interest and curiosity, on the other hand, guided learning provides the structured mental connections for the enhancement of the cognitive processes essential for learning. Gagné's nine events of instruction is a prescriptive method that teachers can use as a template when planning their lessons. The nine events are divided into three groups of three events each: The first three events relate to the sensory memory and are preparatory to learning: (1) gaining attention; (2) informing learners of the objectives; and (3) recalling prior knowledge. The second group of three events relate to the working memory, where all the major processing happens: (4) introducing content; (5) providing guidance; and (6) eliciting learners' performance. The final three events relate to the permanent memory: (7) providing feedback for performance; (8) assessing performance; and (9) eliciting transfer. The teacher has autonomy on how to work within each event. The model informs the essential steps and the order of events.

Metacognition needs to be intentionally developed.

Bandura (1978, 1893) warns that greater understanding of cognitive theories has demonstrated that improvements of intellectual functions require more than just the understanding of cognitive processes, but it also requires actions upon such processes. Paris and Winograd (1990) emphasize that convincement on the importance of being strategic or metacognitive is not enough to teach students how to use cognitive tools. Students need to have a repertoire of strategies that they know how, when, and why to use. Long before that, Dewey (1933) affirmed that, although the capacity to think is inherent to humankind, the accurate use of

thoughts does not occur naturally. Kepalaitè (2010) and Rabikowiska (2008) agree that, despite being a natural human capacity, reflection should be improved by intentional training. These authors state that not addressing reflection intentionally in the classroom is an indication of bad practice. Schools should not expect students to develop the capacity to exercise reflection as a residue of education when educational practices themselves do not model reflection. Reeve and Brown (1984) state that reflection is not only subsumed in metacognition, it is essential for the accuracy of metacognitive knowledge and regulation. According to Campione and Brown (1979), and Reeve and Brown (1984), metacognitive training has had positive effects on general problem-solving skills. Training has improved intellectual performance of children with, and without, learning deficits. Metacognitive learners are more self-reliant, more resilient, more flexible, more strategic, more efficient, and more productive than their less metacognitive peers (Scheid, 1993).

Brown (1975, 1982) and Vygotsky (1962) stress that incidental learning should not be overlooked; there is empirical evidence to confirm that active interactions with meaningful environments provide valuable ways of learning. Some individuals learn to be metacognitive by themselves (Livingstone, 1997). However, in environments that require traditional teaching and learning methods, students can benefit from guided instruction (Clark et al., 2012) and metacognitive interventions to improve achievements (Schraw, 1998). Intentional instruction is a deliberate, systematic, strategic, and effortful endeavor. Dunlosky and Hertzog (2009) assert that:

> …learning is intentional and goal-directed, with individuals having great control of their own learning. Such control is presumably critical for effective learning because individuals need to regulate and adapt their learning to specific material as well as to the progress they have already made (p. 251).

Metacognition and ability.

Individuals with average intelligence naturally engage in metacognitive operations when they face cognitive challenges (Livingston, 1997). They use self-talk to ask themselves questions, to monitor their progress, to look for better solutions, and to learn important information. Somehow, some individuals naturally perceive that they are doing it and consciously perfect their strategies, becoming more metacognitive. These individuals are more successful than others in tasks that require thinking. In environments where intelligence is associated with thinking skills, developing metacognitive skills is synonymous with making people more intelligent.

However, metacognitive skills are especially enabling for students that lack ability or have little prior knowledge. Swanson (1990) found that students with high metacognitive ability, regardless of having high or low IQ, used fewer and more effective strategies to solve complex problems, demonstrating more efficiency in learning. Schraw (1998) highlights that Swanson's (1990) study provides two essential pieces of information: first, metacognition is not strongly correlated with ability - a low achieving student, given the stimuli, can develop metacognitive skills and become higher achievers; second, metacognition increases the individual's problem solving skills regardless of IQ - metacognition can compensate for low ability.

Task-specific and task-general interventions.

Reeve and Brown (1984) state that benefits of metacognitive interventions have been found both with regards to task-specific skills (reading, writing) and task-general skills (problem-solving). Task-general training encompasses interventions which focus on ameliorating individuals' cognitive monitoring and control as a whole. Such interventions have been

particularly effective in improving intellectual capability of children with learning disabilities (Reeve & Brown, 1984). Task-specific studies are abundant in the metacognitive literature. For example, in reading comprehension, Zimmerman and Martinez-Pons (1990) affirm that poor readers who demonstrate few self-monitoring and self-regulation abilities can benefit greatly from explicit instruction on cognitive monitoring and self-regulatory strategies. Michalsky, Mevarech and Haibi (2009) found that addressing metacognition before, during, and after instruction is a valid tool for enhancing reading comprehension performance. In writing, Bereiter and Scardamalia's (1987) study indicates that the essential difference between the writing techniques employed by novice and expert writers is that expert writers use more sophisticated metacognitive and self-regulating processes; whereas novice writers employ simple story-telling techniques, without using effective problem-solving skills. In math, systematic use of metacognition is effective in the improvement of logical resolution of fraction problems (Cardelle-Elawar, 1992; Chahon, 1999). In science, metacognitive ability is related to better problem-solving skills (Rozencwajg, 2003). In social skills training, metacognition can be used to teach students how to self-direct, self-monitor, self-evaluate, and self-correct social behaviors (Holder, Whetstone, & Sheinker, 2008). In the treatment of schizophrenia, a metacognitive intervention was used to decrease patients' biases and diminish personalization when attributing causes to life events (Moritz & Woodward, 2007). Moritz and Woodward (2007) found that: (a) problems can have more than one cause; (b) patients developed increased awareness that life events can be interpreted through different perspectives and they do not have to be the center of causality; (c) patients gained more control over catastrophization - they learned to attribute more realistic importance to life events.

Reeve and Brown (1984) state that generalization is one of the intended impacts of every intervention research: “the central goal of most intervention research is to ensure that the trained techniques can be used to solve problems different to those on which the skills were taught initially – the aim of most interventions is the generalization of skills” (p. 346). The authors highlight that generalization is more likely to happen in two situations: first, when subjects know the purpose of the intervention (consciousness/awareness); if subjects are not informed of the objective of the intervention, they cannot transfer the skills. Secondly, generalization is more likely to occur when training involves “task-general skills.” “Task-specific skills” only generalize through very similar situations to the one in which training occurred. Metacognitive skills in one subject matter do not seem to naturally generalize: “Having good metacognitive skills for writing, for example, does not necessarily mean that one has good metacognitive skills for reading” (Reeve & Brown 1984, p. 353). However, a metacognitive person can apply metacognitive skills in general and specific situations. Schraw (1998) discusses that “Metacognitive knowledge is multidimensional, domain-general in nature, and teachable” (p. 113). The author distinguishes cognitive and metacognitive skills. He explains that cognitive skills can be specific to subject areas, whereas metacognitive skills tend to generalize over different subject areas. Subject-specific knowledge can facilitate metacognitive processes in that subject, but it does not guarantee high metacognitive skills in other subjects. The author states that metacognition skills are more durable and general than “domain-encapsulated” cognitive skills.

Metacognition and social skills.

According to Holder et al. (2008), social skills encompass a set of behaviors that individuals display when they interact and communicate with others. Bandura (1993) states that

most of human behavior is purposive, premeditated, and intentional, actions embody a cognized goal and are regulated by fore-thought. Behavior management is usually related to social skills. When individuals can tell right from wrong, they can choose how to behave. Gresham, Elliot, and Kettler (2010) contribute that most children who display inappropriate behavior, or are at-risk for behavior disorder, have severe deficits in social skills. Most definitions of social skills include the ability to communicate with others, peer and group interactions, self-management, problem-solving, and decision-making. Social skills can be observed through the individual's ability to understand his own feelings, as well as those of others. They include the ability to label those feelings, express, and react to them. The authors add that strong social skills allow the individual to: build "mature, strong and positive" relationships with peers and family members; succeed in school, both academically and socially; and become productive and integrated workers and citizens. Social skills deficits can span through the individual's personal, academic, and professional life (Kupersmidt, Coie, & Dodge, 1990; Newcomb, Bukowski, & Pattee, 1993; Parker & Asher, 1987). Social skills deficits can be divided into two categories: acquisition deficits and performance deficits (Elliot & Gresham, 2008; Gresham et al., 2010). *Acquisition deficits* are characterized by "*can't do*" problems. They encompass the individual's absence of knowledge of what to do in a given situation. Either the person was not taught what the expected behavior is, or has not learned how to perform it. Acquisition deficits require interventions that include direct instruction, modeling, coaching, and rehearsal. *Performance deficits* are characterized as "*won't do*" problems. The individual refuses to behave at conventional levels, even though he knows what to do and how to do it. Interventions are usually based on reinforcement and motivation. Addressing social skills deficits is important because such social skills deficits generate performance deficits (Gresham et al., 2010). Students may have high

ability but fail to perform due to inappropriate behavior. Deficits are more evident when individuals make the transition into adult life (Holder et al., 2008). The base of behavioral contracts involves the consciousness of undesired behaviors, awareness of desired behaviors (identification of gap), and strategies to monitor and control the development of new behavior. This is essentially a metacognitive endeavor.

Use of metacognitive strategies in the classroom.

Schraw (1998) and Schraw, Crippen, and Hartley (2006) found that metacognitive training could help even young children to develop metacognitive skills. Despite still being a fuzzy construct (Reeve & Brown 1984; Tarricone, 2011), there seems to be a consensus in the metacognitive literature that whatever goal a metacognitive intervention has, it always includes "planning, monitoring, and evaluation (Jacobs & Paris, 1987; Schraw, 1998). *Planning* involves knowledge of what to do, recollection of prior knowledge, how to locate resources, and how to select appropriate strategies (Brown & Campione, 1978). *Monitoring* depends on the learner's understanding of the task, knowledge of the desired goal, what is expected from him, step-by-step sequencing of tasks. It helps when: instruction is chunked into smaller, manageable units; instructions are clearly stated; actions are modeled; and performance is coached. *Control* involves maintenance or redirection of action according to information collected during monitoring.

Schraw (1998) presents two general frameworks that teachers can use when planning metacognitive instruction. The first one is the *strategy evaluation matrix* (SEM), which consists of reading comprehension strategies paired with information of how, when, and why they should be used. As most subject matters rely on students' good reading to understand and process content knowledge, these strategies can be useful for any activity that requires reading

comprehension skills. This model has been used in empirical research for several years and rendered significant improvement of learning for both individual students and groups (Jonassen, Beissner & Yacci, 1993, Schraw, 1998). The strategies in Table 4 were presented to the teachers as suggestions of metacognitive strategies that they could incorporate when planning their lessons. These strategies were consistent with Gagné's nine events of instruction (Gagné, 1985) and the Success component of the Music Model of Academic Motivation (Jones, 2009), which were both included in the lesson plan that teachers developed and applied during this intervention.

Table 4

Strategy evaluation matrix (SEM) from Schraw (1998).

Strategy	**How to use**	**When to use**	**Why to use**
Skim	Search for headings, highlight words, previews, summaries	Prior to reading an extended text	Provides conceptual overview, helps to focus attention
Slow down	Stop, read, and think about information	When information seems especially important	Enhances focus of one's attention
Activate prior knowledge	Pause and think about what you already know. Ask what you don't know	Prior to reading or unfamiliar ask	Makes new information easier to learn and remember
Mental integration	Relate main ideas. Use these to construct a theme or conclusion	When learning complex information or deeper understanding is needed	Reduces memory load. Promotes deeper level of understanding
Diagram	Identify main ideas, connect them, list supporting details under main ideas, connect supporting details	When there are a lot interrelated factual information	Helps identify main ideas, organize them into categories. Reduces memory load.

The second framework contributed by Schraw (1998) is the *regulatory checklist* (RC) intended to facilitate monitoring and control of cognitions before, during, and after tasks. This framework can be expanded and made specific by classroom teachers depending on the subject matter they teach. Systematic and consistent use of strategies that best fit the student's learning

style may automatize the use of such strategies so they may become part of the student's study skills. The planning, monitoring, and evaluation questions below were modeled during the workshops and incorporated before, during, and after each activity in the lesson plan used in this intervention.

Table 5

Regulatory checklist (RC) from Schraw (1998).

Planning
What is the nature of the task? What is my goal? What kind of information and strategies do I need? How much time and resources do I need?
Monitoring
Do I have a clear understanding of what I am doing? Does the task make sense? Am I reaching my goals? Do I need to make changes?
Evaluating
Have I reached my goal? What worked? What didn't work? Would I do things differently next time?

Metacognition and learned helplessness.

Helpless individuals have a tendency to: overgeneralize; magnify consequences of failure out of proportion; and make a catastrophe out of manageable situations (Abramson, et al., 1978; Peterson et al., 1993; Sahoo, 2002). They fail to perceive the dependency between efforts and outcomes. Consequently, they develop a maladaptive belief that results occur randomly - independently of the individual's actions or choices. After repeated experiences with uncontrollable situations, they come to expect further uncontrollability in the future and end up

giving up even before trying to produce desired outcomes. This generates a sense of incapacity to: control the environment; organize; and carry out the actions required for successful performance.

Thus, based on the literature, one can infer that metacognition can be an effective tool for the alleviation of learned helplessness because accurate metacognitive self-knowledge involves self-reflection, self-assessment, and self-evaluation which are essential instruments for accurate self-appraisal, accurate appraisal of reality, and accurate perception of personal control (Brown & Campione, 1978; Cullen, 1985), which might prevent the maladaptive attributions associated with learned helplessness. The reasoning behind this assumption includes. First, metacognition presupposes awareness of one's cognitive processes, as well as the capacity to use specific strategies to monitor and control those processes (Reeve & Brown, 1984); this allows individuals to track their attributional style, remediating or preventing maladaptive attributions which are not based on facts, and which can cause emotional distress (Bandura, 1978). Wells (2008) informs that reality testing is a metacognitive method used to identify "distortions in patient's thoughts beliefs" with the objective of raising patient's awareness of automatic defeating thoughts and prompting the conscious replacement of such defeating thoughts with healthy ones. Second, the capacity to understand, monitor, and control thoughts, gives the individual greater perception of personal control, as well as the control of situations of the environment that can affect their decision making processes - including decisions about attributions for outcomes (Kluwe,1982; Reeve & Brown, 1984; Sahoo, 2002). Third, metacognition fosters fact-based reflections in opposition to the irrational instinctive responses to stimuli caused by learned helplessness (Seligman, 2006). Wells (2008) explains that subjective interpretations are impregnated with affection and may not account for the reality of facts, whereas objective analysis based in factual

evidence provides emotional detachment and allows for a less stressful way to interpret life events. Fourth, a more accurate and assertive capacity to appraise reality may help individuals attribute correctly proportioned importance to life events, remediating and/or preventing the occurrence of overgeneralization, personalization, and catastrophization. Fifth, planning, monitoring, and control of thoughts before, during, and after tasks foster focus, engagement and active participation. It also provides empowerment and increases interest, self-efficacy, and motivation, which results in decreased helplessness (Bandura, 1997; Reeve & Brown, 1984, Sahoo, 2002, Seligman, 2006). Sixth, planning, monitoring, and control practices during tasks provide greater opportunities for success, which is essential for the disconfirmation of failure expectancies (Hollon & Garber, 1988). Finally, evaluation of results based on the processes undertaken for the achievement of the desired outcomes helps individuals regain the perception of dependency between efforts and outcomes (Dweck, 1975).

Metacognitive reality testing and learned helplessness.

Metacognitive therapy, based on reality testing, has demonstrated success in alleviating depression and anxiety (typical emotional states caused by helplessness) (Peterson et al., 1993; Seligman, 1993; Wells, 2008). Patients are led to detach themselves from a given problem, think objectively, and look for concrete evidential reality that may confirm or disconfirm their interpretation. Wells (2008) states that, “The fundamental nature of the metacognitive level of working is that it should enable the individual to become aware of maladaptive thinking styles and processes, and to change the mental model of cognitions and ways of experiencing thoughts” (p.37). The consciousness brought forth by reality testing, through fact-based appraisal of self and life events, results in higher capacity to identify and quit maladaptive styles. As behavior is demonstrative of thoughts, change in thinking patterns may be observed through changes in

behavior. Reality testing may be a valid method for individuals to identify gaps between thoughts and reality, as well as the gap between beliefs about performance and actual performance. Reality testing is the base of cognitive positive therapy (Seligman, 2006). It is an effective method to treat learned helplessness in children and adults. The ABCDE method of desensitization of automatic thoughts provides guidance for the disputation of automatic irrational thoughts (Seligman, 1993). Individuals are exposed to systematic reality testing, and led to make new healthy attributions to stressful events. Although the learned helplessness literature does not make explicit connections with the metacognition theory, the desensitization of automatic thoughts, for example, is done by means of awareness, monitoring, and control of thoughts - which are defined as classic components of metacognition.

Conclusions

The examined literature leads to the belief that learned helplessness in individuals who do not have a mental disability, is an environmentally-originated disorder that causes cognitive, motivational, and emotional deficits (Abramson et al., 1978; Bandura 1978; Sahoo, 2002). Such deficits are very detrimental to learning because learning requires good intellectual functioning, high levels of motivation, resilience, and self-regulating capacity (Diener & Dweck, 1978; Dweck, 1975). Learned helplessness can be a cause and consequence of low academic achievement, lack of motivation, and dropout (Kerr, 2001; Peterson et al., 1993). Learned helplessness affects individuals and groups (Simkin et al., 1983). Group helplessness does not originate from the sum of helpless individuals, but a large number of helpless individuals can undermine the success of the group (Peterson et al., 1993). Bandura (1998) stresses that individuals who are labeled as belonging to low achieving groups, such as women in science, tend to achieve below their capacity when they are asked to disclose characteristics that refer to

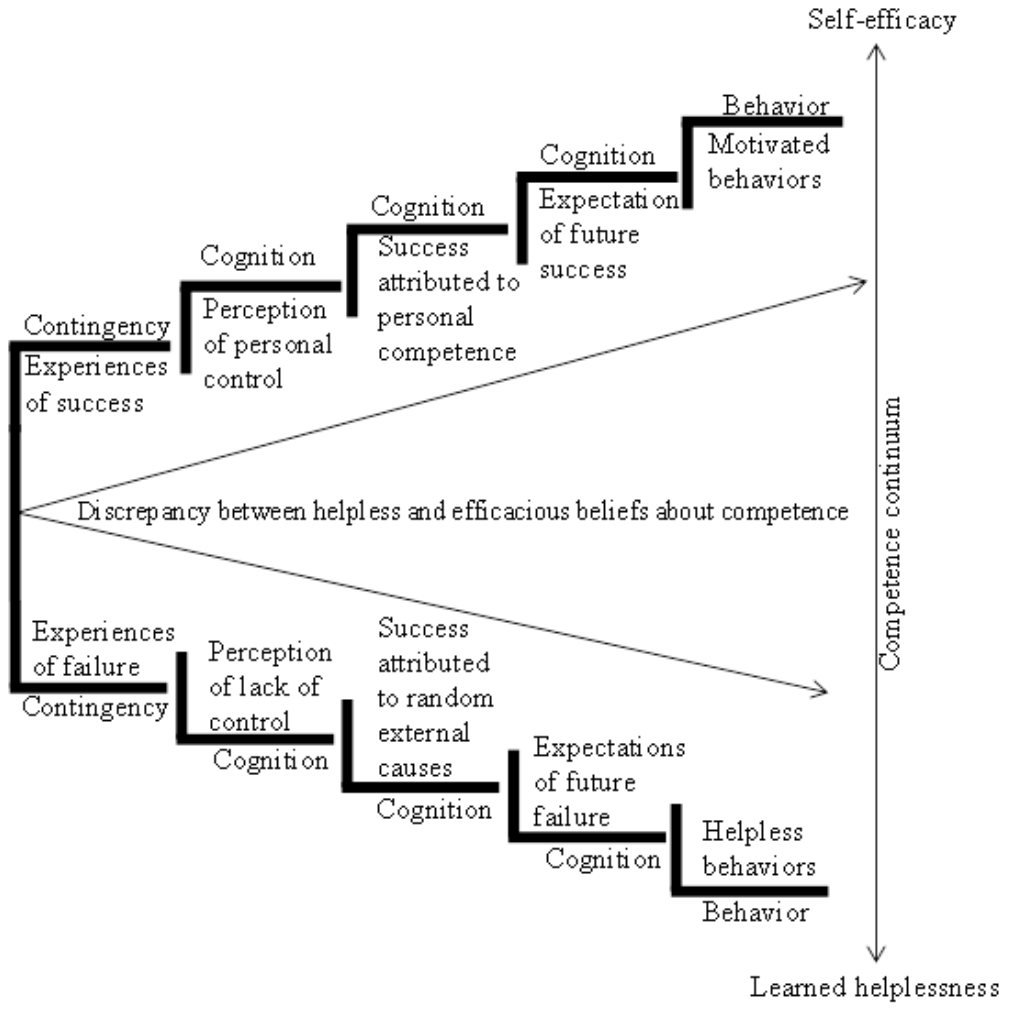
such labeling before an exam. Therefore, students enrolled in consistently low achieving public schools, labeled as low achieving, may identify with such collective identity and react according to the labeling. Likewise, teachers working with low SES and low achieving students may lose motivation to teach due to the generalized beliefs that those students do not have the capacity or the desire to learn. They may lower the standards of their teaching and establish low expectations for the students due to the symbiotic dysfunctional dynamics perceived in the environment.

Fortunately, both individual and collective learned helplessness can be cured (Seligman, 1975) reversed, alleviated (Bandura, 1978; Abramson et al., 1980), combated (Sahoo, 2002), or immunized (Peterson et al. 1993; Roth, 1980; Seligman, 2006). The most frequent ways of mitigating helplessness are to provide students with opportunities for success to disconfirm prior beliefs of incompetence and reconstruct their perception of the connection between efforts and outcomes (Bandura 1977, 1978, 1997; Donovan et al., 1985; Dweck, 1975, 1999; Holon & Garber, 1980; Peterson et al. 1993; Teasdale, 1978; Wells, 2008).

Fincham and Hokoda (1989) assert that teachers may be the first professionals to detect signs of learned helplessness in students, because (1) teachers have the knowledge of the students' cognitive developmental levels; (2) they hold the students' achievement records (evidence of competence); (3) they can easily identify the students' attributions for success and failure; (4) they involve students in tasks that require intellectual reasoning, and motivation; and (5) they spend enough time with students to perceive emotional instability. Knowing how to identify learned helplessness may be an important tool for teachers to address the problem in a cognized and effective way. In the competence continuum, learned helplessness and self-efficacy occupy opposite extremes (DeVellis et al., 1978; O'Leary et al., 1977).

As shown in figure 4, learned helplessness decreases as self-efficacy increases:

Figure 4. *Discrepancy between helpless and efficacious beliefs about competence*



Helplessness derives from the individual's perception of lack of control and self-efficacy derives from the individual's perception of capacity to exercise control (Abramson et al., 1978; Bandura, 1978, 1993,1997). As both learned helplessness and self-efficacy have the exercise of control as an essential contingency, one can infer that behavioral interventions which facilitate control may mitigate helplessness and increase self-efficacy because, from the perspective of

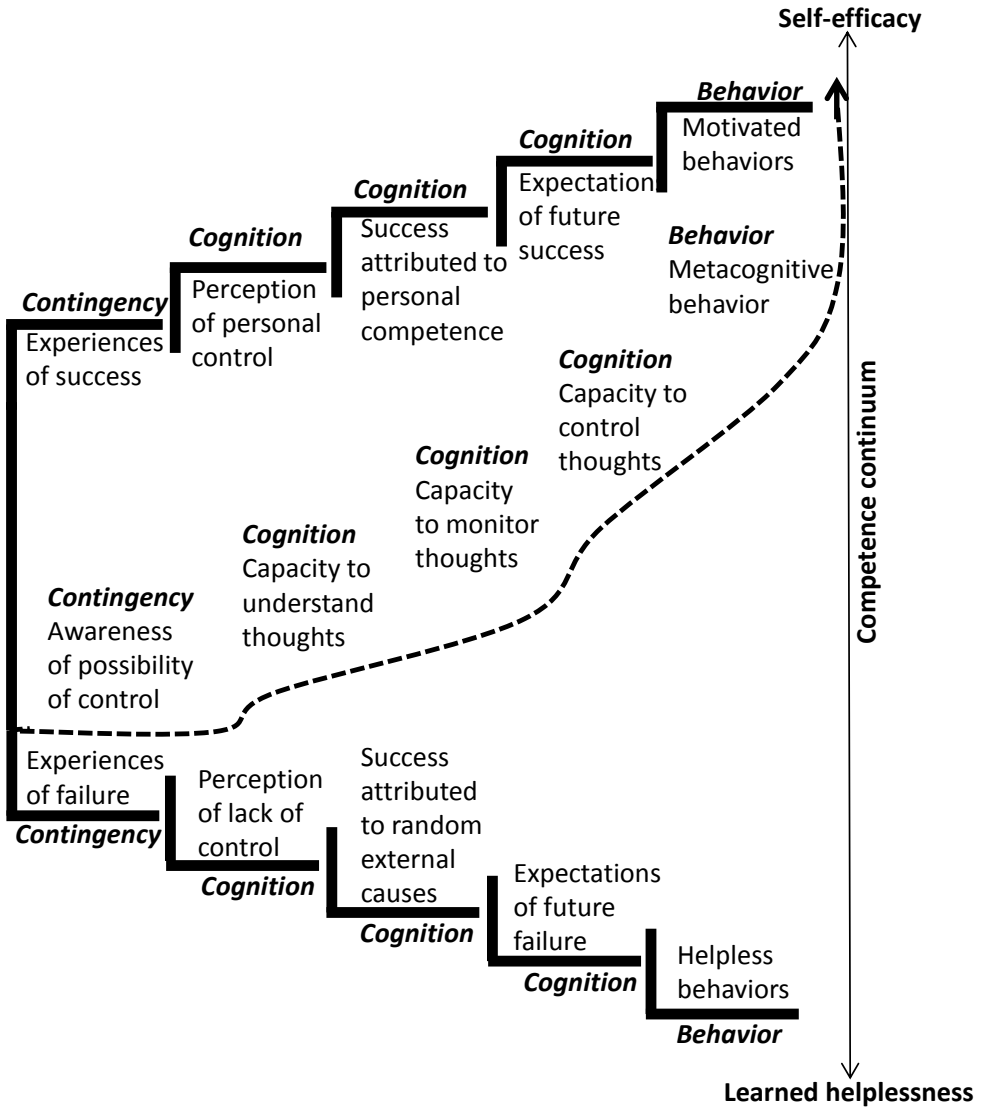
personal control, these two constructs are mutually exclusive (Bandura, 1997; Sahoo, 2002; Wells, 2008).

Thus, interventions to address this issue should seek to close the discrepancy between the individual's beliefs of helplessness and efficacy. As individuals learn to be helpless, their beliefs about competence deteriorate. As individuals experience success beliefs about competence increase. Individuals who start life in a similar position may develop in opposite directions with regard to competence, depending on their experiences with controllability. Competence discrepancy is the difference between what helpless and efficacious individuals believe about their competence. However, both constructs have the exact same structure. Abramson et al. (1978) inform that helplessness has three essential components: contingency, cognitions, and behavior.

After examining the literature and concluding that metacognition could be an effective tool for the alleviation of learned helplessness, metacognition was added to the graph (see figure 5). The objective was to provide a visual representation of the common structure of the three theories: learned helplessness, self-efficacy, and metacognition, and to demonstrate how metacognition can bridge the gap between helpless and efficacious beliefs of competence. Learned helplessness originates from experiences with lack of control (Abramson et al., 1978). Self-efficacy can be enhanced through concrete evidences of capacity to exert control (Bandura, 1997). Therefore, learned helplessness is an undesired state, whereas, self-efficacy is the desired state. Metacognition provides the mind tools necessary for deliberately exercising accurate appraisal of thought processes, which when applied and monitored, can exert deliberate control of thoughts. These tools can be used to prevent and/or substitute unrealistic and maladaptive thought processes associated with learned helplessness. The figure below contains the three

constructs, with metacognition being a tool that can help students make the transition from a helpless to an efficacious state.

Figure 5. Metacognition may be an effective tool to increase control of cognitions, prevent maladaptive self-defeating thoughts, and increase sense of efficacy.



Professional Development for Teachers

The conclusions above led the researcher to wonder whether an intervention aimed at equipping teachers with the knowledge, skills and tools to understand the dynamics of learned helplessness, self-efficacy, and metacognition could impact teachers' beliefs in their capacity to

teach the specific population of low achieving and low SES schools in the favelas in Rio de Janeiro. In the process of evaluating how that intervention could be conducted, professional development workshops appeared to be a prevalent teacher training method. However, due to controversies about the effectiveness of workshops in producing long-term impact on participants, the literature on professional development workshops was reviewed with the purpose of identifying characteristics that could enhance the effectiveness of professional development workshops for teachers.

Professional development workshops have been a common teacher training method (Guskey, 2000). Amendments to Section 9101 (34) of the Elementary and Secondary Education Act, as reauthorized by the No Child Left Behind Act of 2001, in the USA, describe professional development workshops as **"**a comprehensive, sustained, and intensive approach to improving teachers' and principals' effectiveness in raising student achievement" (Learning Forward, 2009). Despite controversies about long-term effectiveness of professional development workshops they are frequently utilized (Mahler & Benor, 1984). Mahler and Benor (1984) conducted a study to compare long- and short-term benefits of workshops. Sixty volunteer professors participated in a four-day workshop series on microteaching. The workshop sessions were (1) collaborative, (2) practical, (3) well-structured, (4) meaningful to their profession, and (5) had possibilities of immediate use by participants. The effects of participation were monitored for 500 days following the workshops. Results confirmed that *effects on performance* could be observed over the 500 days of monitoring, but *cognitive effects* started deteriorating after about 200 days. The authors discuss that the difficulty in asserting the impacts of workshops are similar to the difficulties assessing educational outcomes in general. For example, (1) most workshops lack clear objectives and appropriate assessment strategies associated to

them; (2) there is not a single agreed-upon criteria of good quality teaching to orient evaluation of results; (3) workshop audience is not homogeneous - diverse personal characteristics impact perceptions of effectiveness; (4) assessment is usually based on quick surveys that lack statistical attributes; (5) few longitudinal studies with appropriate design and assessment methods exist.

Lyndon and King (2009) concur that prolonged professional development has consistently been described as more effective in producing long-lasting impact of changes. However, they affirm that short professional development (PD) workshops can be effective when they incorporate some essential characteristics to compensate for time constraints. The authors highlight that, actually, as lack of time is the prevailing impediment for teachers' continuing educaction, when workshops are short, but well-structured, short episodes can be especially attractive to busy teachers who cannot make long-time commitments. Effective workshops use specific strategies to foster buy-in, maximize efficiency, and trigger resilience. Cordingley, Bell, Thomason, Firth (2005) assert that collaborative professional development workshops (CPDW) are more effective than sustained professional developments that do not foster collaboration. By sustained, they mean that teachers are released from their classrooms for an entire day or residential courses with no classroom activities on that day. As to collaborative, they mean all teachers working together sharing experiences with local education authorities, higher education institutions, or other professional from whom they believe they can learn something.

The value of short workshops, before change in practice, was evidenced in King (2000, 2001), King, Fleming, Kennett, and Thompson (2002) and King, Fleming, Kennett, and Thompson, (2005). Based on King et al.'s findings on the benefits of short collaborative professional development workshops (SCPDWs) for science teachers, the Earth Science Education Unit (ESEU) created a program to provide workshops to science teachers all over the

United Kingdom (Lyndon & King, 2009). ESEU workshops could last two and a half days, or be broken into ninety-minute sessions once a week until the whole program was covered. The ninety-minute timeframe was an average between how much time the teachers were willing to spend on training and the amount of resources that the school intended to employ. The objectives of the ESEU program included: (a) increase content knowledge of earth science; (b) increase knowledge and skills of best teaching strategies for science education; (c) emphasize the importance of teaching approaches that foster student engagement; (d) add new ideas and strategies to teachers' repertoire, instead of letting teachers bring up their old ideas; (e) increase teachers' confidence by providing them with the opportunity of rehearsal of knowledge and skills utilizing new skills; and (f) develop critical thinking skills in teachers and students. To avoid the constraints that could undermine the success of the workshops, researchers (a) limited the time of the workshop to 90 minutes of well-structured work, (b) involved all of the teachers in the science departmentat, (c) offered the workshops free of charge, and (d) at convenient times for the participants. The ESEU project followed some of the guidelines described by Lyndon and King (2009) to evaluate the effectiveness of the workshops. Lydon and King (2009) attributed the success of the ESEU project to the fact that although they were short, the workshops incorporated most of the elements that research has prescribed as essential for the quality and effectiveness of short-term workshops.

Guidelines for design of effective professional development workshops.

Opportunities of practice and coaching are the two elements that have the greatest impact on participants' perception of effectiveness of short workshops (Adey, 2004; Day 1999;); Cordingley et al., 2005a, b). However, the list contributed by Lyndon and King (2010) contains the following elements:

1. Effective workshops must be well-structured; the information must be presented in a gradual and sequential order through good quality material by a specialist.
2. Workshop goals must be aligned with participants' needs and/or interests.
3. Content must be meaningful in the perspective of the participants and they must envision the possibility of immediate practical application of knowledge and skills.
4. The workshops should include modeling of best practices followed by hands-on practice and coaching with plenty of instrumental feedback.
5. Professional development ought to include as many teachers in the school or department as possible.
6. Professional development, and the changes it generates, must have overt support from the school administrators.

Guidelines for the evaluation of professional development workshops.

As to the evaluation of the effectiveness of workshops after completion, Lyndon and King (2009) suggest five standards:

1. Participant reactions: This is based on participants' satisfaction. Although participants' satisfaction with the workshops may not result in automatic application of the knowledge, skills, or tools developed, there is evidence in the literature that satisfaction is an essential component of resilience, buy-in, mastery orientation, and motivation (Bandura, 1993; Jones, 2009; Keller & Suzuki, 1998).
2. Participant learning: How learning is measured depends on the theoretical orientation of the institution and teachers alike. However, in short professional development episodes, the prevailing method used is self-report estimates (Guskey, 2000), since participants may view other forms of assessment as intimidating.

3. Organizational support to change. This item was found essential in any kind of professional development (Guskey, 2000). The vision of the organization, material and immaterial support, openness to novelty, attitude to promote a safe environment, collegial support, recognition of success, and allocation of time for activities are all determinants of the success of any kind of professional development.
4. Participant's use of new knowledge and skills: Guskey (2000) stresses that the gradual, cumulative, and sequential order for the presentation of new ideas is especially important for short-course events. Participants must master whatever knowledge they need for practice before they move into real world practice. The author emphasizes that practicing newly acquired skills is crucial; however, it should be done "after participants have had sufficient time to reflect on what they learned to adapt the new ideas to their particular setting" (p. 178).
5. Students' outcomes: Considered the ultimate goal of education, observable changes in students' cognitive, affective, and psychomotor skills are the best indicator of the effectiveness of any educational intervention. However, students' outcomes need to be approached with caution (Guskey, 2000) because the lack of sufficient time for results to emerge, lack of appropriate assessment methods, and complexity of the students' ways to demonstrate achievement has led to countless studies to report no significant differences when differences did occur. Lyndon and King (2009) add that emphasis on that impact of the workshop on students is desirable, particularly in combination with evidence of change in practice, but it may be difficult or impossible to isolate the effects of a particular episode at the student level.

Professional development workshops and participant's self-efficacy.

Although overlooked in most workshop frameworks, self-efficacy is the participant's characteristic that has great influence on the effectiveness of professional development workshops (Guskey, 2000). Teachers' self-efficacy represents the beliefs that teachers hold about their own capacity to bring about learning and influence students' behavior (Bandura 1997, 1998). Research has indicated that teachers' self-efficacy affects classroom behavior and teachers' capacity to implement changes (Guskey, 2000; Tschannen-Moran & McMaster, 2009). Teachers' appraisal of their instructional efficacy is based on judgments of their own teaching competence and assessment of assumed task requirements (Tschannen-Moran & McMaster, 2009). Assessment of personal capabilities depends on self-evaluation and assessment of internal strengths and weaknesses. Assessment of task requirements includes their current level of achievement, motivation, and contextual factors, such as resources available, students' behaviors, peers' attitudes, etc. Accuracy of judgments depends on self-knowledge, content knowledge, instructional knowledge, and capacity to exercise fact-based reflection (Reeve & Brown, 1984). Guskey (1986) argues that most of the changes proposed through professional development workshops do not succeed because presenters fail to consider teachers' beliefs in their capacity to implement proposed changes. Efficacious teachers view changes as innovations, they visualize how the implementation of new strategies can impact the quality of their teaching, and students' outcomes. Inefficacious teachers view changes as threats, an extra burden, and concentrate on how they will be personally affected.

Timperley and Philips (2003) conducted a study to investigate the conditions required for the implementation of changes in reading comprehension practices. Strategies involved refinement of understandings of reading tasks and how to implement them. They concluded that

to enhance teachers' self-efficacy, professional development must address teachers' beliefs of competence as much as they address best practices. Stein and Wang (1988) attempted to identify determining factors in teachers' commitment to implement change. They found that improvement of teachers' beliefs about their expertise exerted the greatest influence on commitment; however, it was immediately followed by perceptions of self-efficacy.

Conclusions

Based on the reviewed literature, one can conclude that short collaborative professional development workshops can be an effective teacher training method, especially when they incorporate some specific elements that compensate for the time constraints (Adey, 2004; Day, 1999; Lyndon & King, 2009). Therefore, collaborative professional development workshop was the method chosen for this study.

Chapter 3: Methodology

Formative And Design Experiment (FADE) Chapter three consists of the presentation of the methodology and initial implementation plan. As the methodology allows for changes and adaptations to the initial plan according to the dynamics and complexity of the research setting, the actual implementation is presented in Chapter four. This study was designed to address the following general research question: How does participation in collaborative professional development workshops on learned helplessness, self-efficacy, and metacognition impact teachers' perceived efficacy with regard to their capacity to address students' helplessness?

Three secondary questions were also addressed:

a. What are teachers' beliefs about their own capacity to mitigate learned helplessness before and after the intervention?
b. What are participating teachers' perceptions of the impact of implementing a lesson plan including the Nine Events of Instruction (Gagné, 1985), the MUSIC Model of Academic Motivation (Jones, 2009) and metacognitive strategies (Schraw, 1998)?
c. From the beginning to the end of the implementation of the study, will there be a difference in teachers' (a) learned helplessness, (b) instructional efficacy, and (c) metacognition?

The goal of this study was to investigate whether participation in professional development workshops on learned helplessness, self-efficacy and metacognition could impact teachers' beliefs in their capacity to address students' helplessness. The first underlying assumption based on the literature was that with deeper understanding of the theoretical background upon which practice is constructed, teachers would develop a stronger belief that through their pedagogical practices, they

would be capable of impacting students' individual learning outcomes as well as the classroom environment. As increased instructional efficacy has been reported in the specialized literature as having high impact on students' outcomes, the second underlying assumption is that by increasing teachers' efficacy, the students would be impacted as a consequence of teachers' practices (Bandura, 1997; Jones, 2009; Tschannen-Moran, Woolfolk-Hoy, & Hoy, 1998).

Assumptions Based on the Literature Review

Based on insights from the reviewed literature, the overall assumptions that guided the definition of the research goal and oriented the design of this study were as follows:

1. The conditions of the environment surrounding the schools in disenfranchised areas in Rio de Janeiro contain the same elements described in the learned helplessness literature as being possible causes of learned helplessness. Poverty, low achievement, impossibility of controlling essential life events, violence, pessimism, low resilience – all of these conditions, especially when combined, contribute to repeated experiences with uncontrollability that trigger the development of learned helplessness (Abramson et al., 1978; Barreto & McManus, 1997; Dowdney, 2003; Dweck, 1995; Sahoo, 2002) The assumption was that public school students in low SES neighborhoods in Rio de Janeiro, displaying low achievements and lack of interest in academic activities, may have been affected by learned helplessness.
2. Bandura (1997) and Tschannen-Moran, Hoy and Hoy (1998) affirm that students' motivation and achievement are important sources of instructional efficacy. The teachers in Rio blame students for low achievement and they believe they are not prepared to teach those students. The assumption was that teachers in low achieving

schools in low SES neighborhoods in Rio de Janeiro may also be affected by learned helplessness.

3. Abramson at al. (1978), Bandura (1978), Roth (1980), and Sahoo (2002) concur that self-efficacy is the obverse side of learned helplessness. The two states are inversely related. Therefore, increased efficacy results in a decrease of learned helplessness. The assumption is that increased instructional efficacy would result in a decrease in teachers' helpless beliefs with regard to their capacity to teach in that specific school.
4. Drawing from the attributional theories (Weiner et al., 1971; Zimmerman, 1989, 2002), the learned helplessness theory affirms that the deficits caused by the syndrome derive from maladaptive attributions for outcomes (Abramson et al., 1998; Peterson et al., 1993). Effective alleviation interventions described in the literature include repeated experiences of success associated with changes in the individual's attributional style (Dweck, 1975; Teasdale, 1978; Sahoo, 2002). Metacognition is essential for the individual's accurate appraisal of self, of others, and of the environment; thus, the alleviation of learned helplessness could benefit from higher metacognitive ability. Most interventions created by outstanding researchers in the behavior modification field such as Reeve and Brown (1984), Dweck (1975), Guilham et al. (2007), Seligman (2006), apply processes that rely heavily on metacognitive activities. Metacognitive knowledge increases the capacity to engage in fact-based reflection which can prevent maladaptive attributions (Wells 2008). Metacognitive regulation (before, during, and after tasks) promotes engagement and focus which may help students experience more success (Pintrich, 2004). Therefore,

the assumption here was that metacognition could be an effective tool for the alleviation of learned helplessness in the classroom.

5. Teachers blame students for low achievements – they make external attributions for their failure. Individuals who make external attributions, do not feel personally responsible for outcomes (Peterson et al., 1993; Sahoo, 2002; Seligman, 2006); they do not develop low self-esteem because they do not make self-worth comparisons; Therefore, teachers who believe they cannot teach the students in a particular environment, could have high personal efficacy or high efficacy expectancies but still fail to perform due to low outcome expectancies (Bandura 1979). Efficacy expectancy is related to Personal Instructional Efficacy (PTE) whereas outcome expectancy is related to General Teaching Efficacy (GTE) (Tschannen-Moran et al., 1998). Teachers who do not believe that their instructional practices can impact learning or behaviors are constantly waiting for someone else to change the environment so they can teach effectively. As this is not likely to happen, the assumption was that by helping teachers understand why students may be behaving in a helpless way, and by providing specific strategies to address the problem, teachers may feel more confident in the effectiveness of their teaching practices. If teachers believe that they have the knowledge, the skills, and tools to teach a specific population, they may demonstrate increased GTE and start teaching effectively, despite the environment.

According to the orientation of the formative and design experiments methodology, this study was designed to address the perceived needs of a school community. Congruently with the ESEU project and the guidelines found in the works of Lyndon & King (2009) and King et al,

(2002, 2005) this study's intervention consisted of eight consecutive collaborative professional development workshops. The workshops were held at the school, once a week, during teachers' work hours, and lasted approximately 90 minutes each. Nineteen out of the schools' 30 teachers participated in the workshops, completed questionnaires and surveys. The workshops consisted of theoretical background for practice, practical instructional strategies related to the theories, hands-on practice, and feedback. During the theoretical workshops, the teachers were taught about and discussed four main theories:

1. Learned helplessness: how learned helplessness develops; the associated deficits; how such deficits impact learning; signs of helplessness in the classroom; how teachers can identify signs of helplessness in students; and classroom strategies that can help students break the helplessness cycle (Abramson et al., 1978; Fincham & Hokoda, 1989; Peterson et al., 1993; Sahoo, 2002).
2. Self-efficacy: how it relates to learned helplessness and motivation; sources of self-efficacy information; and class strategies that can enhance self-efficacy (Bandura, 1997; Jones, 2009; Schunk & Pajares, 2005; Tschannen-Moran et al., 1998).
3. Metacognition: what metacognition is; how it can help students regulate their thoughts in order to make healthy attributions for outcomes; how individuals can plan, monitor, and control their thoughts during tasks in order to achieve better results; and how teachers can include metacognition in their classes with the specific purpose of increasing self-efficacy and diminishing helplessness (Flavell, 1971, 1977, 1979; Reeve & Brown, 1984; Schraw, 1998; Tarricone, 2011).
4. The MUSIC Model of Academic Motivation (Jones, 2009): what a model of motivation is; what the MUSIC Model of Motivation is; how it can be used as an

instrumental tool by classroom teachers; and how it relates to learned helplessness, self-efficacy, and students' academic motivation.

Formative And Design Experiments (FADE)

A formative and design experiment (FADE) was selected as the methodology for this study for the following reasons:

- FADE is congruent with the applied research paradigm that calls for contextualized and purposeful research that has the capacity to bridge the gap between theory and practice (Driscoll, 1984; Driscoll & Dick, 1999). Reeves, Harrington, and Oliver (2005) urge that educational research should pursue practical solutions for objective problems "…that detract from the quality of life for individuals and groups in society, especially those problems related to learning and human development." Reinking and Bradley (2008, p. 5) concur that FADE experiments should aim at addressing practical problems, developing workable situations, and accomplishing valued goals. Congruent with the applied research paradigm and the FADE methodology, this study had a pragmatic and transformational purpose: to help classroom teachers develop the understanding, skills, and tools necessary to use their pedagogical practices to address students' learned helplessness.
- The intervention took place in the authentic and complex context of a school where variables could not be controlled or manipulated. In such a dynamic environment, the study needed a flexible methodology that allowed adaptations to the implementation plan to ensure that the mandates of the environment would not prevent the attainment of the research goal.

- This study dealt with psychological constructs that could be measured by means of psychometric tests but could also be observed through participants' behavior. FADE allowed the study to benefit from both quantitative and qualitative data collection and analysis.
- This study involved instruction and this methodology shares the same elements and follows the same developmental phases as the systematic design of instruction (Dick, Carrey, & Carrey, 2007; Gagné et al., 2005; & Bradley, 2008). Some of the elements shared between formative and design experiments and the systematic design of instruction include: (a) Front end analysis of participants' needs and characteristics, (b) identification of goals in alignment with the needs and characteristics of target audience, (c) establishment of objectives that lead to the attainment of the goal, (d) intervention-centered, (e) flexible and adaptive, (f) change management process based on formative feedback and anchored in theory, and (g) final evaluation of processes and results.

Formative and Design Experiment components.

Theoretical focus.

FADE studies aim at providing a solid theoretical background for practice (Reinking & Bradley, 2008). They rely on the combination of theoretical information and field observation that allow participants to develop more inclusive and comprehensive understanding of the phenomena of interest. As FADE is goal-oriented and intervention-centered it has a flexible and adaptive nature; however, all processes and changes made during implementation were anchored in the guiding theories.

Goal-oriented.

Formative And Design Experiments are goal-oriented (Reinking & Bradley, 2008). The overall goal of every FADE is to seek practical solutions and develop workable situations for addressing objective educational problems that hinder learning. The goal articulated by the researcher for a particular experiment becomes reference for data collection and analysis.

Adaptive and iterative.

FADE studies are adaptive and iterative (Reinking & Bradley, 2008). Constant cycles of feedback from participants and environment inform the researcher about the progress of the intervention towards the attainment of the goal. It determines when changes need to made in order to prevent or address risks to the accomplishment of the research goal. Different from conventional research methods, whose validity lies on fidelity to the methodology, FADE presupposes adaptations to the variability of the environment. The dynamics of most instructional environments require changes in strategies and/or resources to achieve pre-established instructional objectives.

Transformative.

FADE studies have a transformational nature (Reinking & Bradley, 2008). The intervention is considered successful when it leaves some positive residue or accountable changes in the participants or in the environment. FADE's transformative characteristic is in accord with the social responsibility that Reeves et al. (2005) and other researchers have advocated. The transformation sought in this study was the increase in teachers' sense of efficacy with regard to their capacity to address students' helplessness. The expectation was that the

theoretical knowledge developed in the workshops would generate the self-assurance necessary to understand the process of implementation of the practical intervention in their classroom. This would make teachers perceive their capacity to use their instructional practices to address students' helplessness.

Methodologically inclusive and flexible.

Formative and design experiments are methodologically inclusive and flexible (Reinking & Bradley, 2008). The researcher can use quantitative, qualitative or mixed approaches, provided the guidelines, standards, and rigor required by each methodology are respected.

Pragmatic.

Formative and design experiments seek workable solutions for a particular group under specific circumstances (Reinking & Bradley, 2008). Research results and discussions seek demonstrable value in solving educational problems rather than discussing universal dilemmas.

Formative and design experiment frameworks.

Formative and design experiments have been used since the early 1980's (Reinking & Bradley, 2008). They surged in response to the dissatisfaction of mainly Vygotskian scholars who complained about the lack of ecological validity in conventional educational studies. Educational environments do not offer conditions for controllability of variables. Besides, the variability of environment and population had a decisive impact on how educational interventions developed and how results were analyzed. According to Reinking and Bradley (2008) the articulation of a formative and design experiment framework only came in 1992 with the publication of a peer-reviewed article by Ann Brown. Although she attributed the term to

Collins (1992), she was the one who provided the first articulated explanation of the framework. Since then, several frameworks have been created. However, there is not a single one that represents this methodology. Reinking and Bradley (2008) state that most frameworks fall into two categories: “Foundational frameworks and explicit frameworks” (pp. 61-73). Foundational frameworks have a more theoretical nature. The latter type offers systematic guidelines for the initialization, design, development, implementation, and evaluations before, during, and after the research. Due to the formative, rather than design-based nature of this study, the explicit framework presented by Reinking and Bradley (2008) was the best match. The explicit framework consists of six questions and six phases that guide the research process.

Formative and design experiment guiding questions.

FADE contributes a series of questions that can be used to guide the design of the intervention (Reinking & Bradley, 2008):

1. What is the pedagogical goal to be investigated, why is that goal valued and important, and what theory and previous empirical work speak to accomplishing that goal instructionally?
2. What intervention, consistent with a guiding theory, has the potential to achieve the pedagogical goal and why?
3. What factors enhance or inhibit the effectiveness, efficiency and appeal of the intervention in regard to achieving the set pedagogical goal?
4. How can the intervention be modified to achieve the pedagogical goal more effectively and efficiently and in a way that is appealing and engaging to all stakeholders?

5. What anticipated positive and negative effects does the intervention produce?

6. Has the instructional environment changed as a result of the intervention?

Formative and design experiment phases.

FADE consist of six phases (Reinking & Bradley, 2008):

1. ***Preliminary phase.*** Includes setting selection, meeting with stakeholders, definition of goals, and creation of a research team with stakeholders' roles and responsibilities, and plans for the implementation of the subsequent phases.

2. ***Demographic data collection.*** Researcher seeks direct contact with stakeholders to gather as much information as possible about the setting and population.
3. ***Assessment of participants' status.*** Prior to the implementation of the intervention, researcher establishes baseline knowledge of the participants' current status with regards to the phenomenon of interest.
4. ***Implementation of the intervention.*** Data collection.
5. ***Post assessment.*** Comparison of the participants' status prior to the intervention and their status after the intervention.
6. ***Finalizing the research.*** Retrospective analysis, consolidation of findings, and writing results.

Research Goal

The goal of this study was to investigate whether participation in professional development workshops on learned helplessness, self-efficacy, and metacognition would impact teachers' beliefs in their capacity to address students' helplessness. In order to achieve this goal,

the intervention design balanced theoretical input, teachers' manipulation of the theories, practical application of the theories in the classroom by participating teachers, and evaluation of the results.

Setting the Context

This research took place in a public school located in a low socioeconomic area, with high indices of violence, in the suburbs of Rio de Janeiro, Brazil. The population displayed low academic achievement and high indices of disruptive behaviors in the classroom. On a scale from 0 to 10, the school's academic achievement index (IDEB) was 3.2 in 2005, 3.0 in 2007, 3.7 in 2009, and 3.9 in 2011 (INEP, 2012). Research shows that public school students in Rio de Janeiro have demonstrated lack of motivation over the past few years (IBGE, 2010; Infoescola, 2009; Pacca, 2009). More than 40% of interviewees declared lack of interest in schooling as the reason for dropping out (Neri, 2009).

The characteristics found in public school environments in Rio compare to the description of the environmental characteristics in the onset of learned helplessness. Such similarity may indicate that the public school students in Rio may be affected by learned helplessness. Helpless individuals display the same signs of abnormal behavior observed in the school environments in Rio. Abnormal behavior can vary from: extreme apathy to disruption and/or violence (Kerr, 2001); pessimism and depression (Peterson et al., 1993); low engagement in learning; lack of motivation; lack of resilience in the face of difficulties; and weak problem-solving skills (Dweck, 1975; Gillham et al., 2008). Such conditions can undermine learning to the extent that they affect essential components of the classroom dynamics: discipline; attention; class participation; and learning outcomes.

Learned helplessness originates from individuals' perceptions of lack of control (Abramson et al., 1978). In this perspective both teachers and students in public schools located in low income areas with high indices of violence in Rio de Janeiro may have been affected by learned helplessness, since neither teachers nor students believe they can exert control over the school environment. Peterson et al., (1993) affirm that learned helplessness can be unlearned and even prevented when individuals experience control. It may be that, if teachers understand the learned helplessness phenomenon and develop some strategies to reverse the process through their own pedagogical practices, they can feel more efficacious with regard to their capacity to teach that specific population.

The students, on the other hand, who cannot control their external environment outside the school, could learn how to control their internal conditions of learning through the development of practical metacognitive strategies (Gagné, 2005). So, enhanced control over their cognitions during learning could mitigate their perceptions of lack of external control which cause helpless behaviors (Seligman, 1978). Robert Gagné (2005) affirms that "metacognitive control processes ... select and set in motion cognitive strategies relevant to learning and remembering….They may exercise control over attention, over the encoding of incoming information, and over the retrieval of what has been stored" (p. 195).

Participants

The school had approximately 30 teachers. Initially, 19 teachers completed the IRB consent forms and started attending the workshops. The workshops were open to all teachers in the school, so some teachers attended the workshops occasionally when their schedules allowed. Sixteen participants attended the workshops and completed the psychometric tests and surveys. Nine participants out of the pool of sixteen volunteered to be part of the research team. The

research team consisted of four elementary school teachers, four middle school teachers and the school's pedagogical coordinator. The participation of the school coordinator was important for two main reasons: it demonstrated the support of the school for the research process and guaranteed continuing use of the theories among the existing staff and teachers who might join the team in future. The details concerning the choice of the school and recruitment of participants can be found in Chapter four.

Responsibilities of participants.

The general group's responsibilities were to attend the workshops, contribute actively to the discussions, and complete the research tests and surveys. The focus team participants' responsibilities were to attend the workshops, contribute actively to the discussions, complete tests and surveys, participate in initial and final interviews, implement the intervention in their classrooms, participate actively in the monitoring and evaluation of results, and produce research data such as lesson plans.

Pseudonyms.

The teachers were afraid that participation in this study would expose them should the School Board identified the participants. On several occasions, during interactions with the researcher, the participants asked the researcher if she was recording or if she was identifying them by name before they made their statements. For this reason, and also to comply with the anonymity presupposed by the Institutional Review Board, each participant received a pseudonym: Adriana, Arthur, Fabiana, Jozi, Joelma, Juliana, Selene, Tamires, and Tatiana. To avoid the identification of the teachers or pedagogical coordinator, the demographics were not

detailed. According to an unidentified participant, the school was “under the spotlight” and any details could give away the identity of the participant. The teachers feared for their jobs.

However, the population of this study had a balanced number of male and female participants. The age range varied from mid-twenties to late fifties. Only one of the participants, an elementary teacher, did not have a higher education degree. She graduated from a high school level teacher education program called Escola Normal, which was a common teacher education program until 1979. None of the teachers had a graduate degree. Most teachers had been working at the school for more than six years. Some teachers had been at the same school for more than 16 years and a small number had just joined the team.

School selection.

The events that led to the choice of this school and these specific participants were: (please find details about site selection and recruitment of participants in Chapter four FADE Phases one and two)

- Researcher contacted the Rio de Janeiro Municipal School Board to seek permission to conduct the research in one of their schools (June 2010 to June 2011).
- Researcher introduced the research topic, underlying assumptions, and preliminary goal to a School Board Official (June 2011).
- School Board Official selected this particular school for the study because she believed it could benefit from the study because the school was located in a low SES neighborhood with high indices of violence; the school was low achieving; the School Board had experienced difficulties with teachers in this school implementing new strategies; but the school administrators were open to novelty and would probably embrace the research project (June 2011).

- Researcher visited the school on three different occasions, introduced the research topic to the school community (Administrators, staff, and faculty), and conducted two workshops with the teachers (July, 2011).
- Teachers completed a survey demonstrating interest in participating in the research (July, 2011).
- Researcher submitted paperwork seeking official permission from the Rio de Janeiro Municipal School Board to conduct the research in one of their schools (July, 2011).
- Permission was granted on August 09th, 2011.
- Virginia Tech Institutional Review Board (IRB) issued letter of consent for the research on February 16th, 2012.
- Research was conducted from February 29th to April 18th at the school premises.

Intervention Design

The intervention consisted of eight collaborative professional development workshops divided into three parts. Part one consisted of theory-based workshops. The purpose of the theoretical workshops was to create a common understanding of the theories and approximate the theories to the teachers' experiences and practices. Part two included one workshop for the operationalization of the theories into classroom practice. A lesson plan framework was developed and shared by all participating teachers. The lesson plan contained elements of Gagné's (2005) nine events of instruction, Jones's (2009) MUSIC Model of Academic Motivation, and metacognitive regulation strategies (Schraw, 1998). Part three included focus team discussions about the implementation of the intervention, class observations, and final evaluation of the research process. The researcher led the theoretical workshops and teachers

contributed with their knowledge of the environment and population, insights for the contextualization of the theories, iterative feedback on the development of the intervention, monitoring and evaluation of results, and research data (questionnaires, surveys, and lesson plans).

Structure of the workshops.

Each workshop lasted approximately 90 minutes. The methodology used during the workshops modeled the framework that would be introduced to the teachers during the operationalization of the theories. Each workshop consisted of a presentation using PowerPoint or Prezi to introduce the theories. The presentation was followed by participants' contributions. Participants were invited to reflect, discuss among themselves in pairs or small groups, and share their insights with the rest of the group. The main objective of the discussions was to get teachers to compare what they had just heard in the presentation to their practices and experiences in this particular school in an intentional way. The researcher contributed with the theoretical knowledge and the participants contributed with reflections about how the theories confirmed or disconfirmed the way they thought, acted, and felt with regard to their instructional practices in that school.

At the beginning of each workshop the group revisited the topic of the previous workshop and participants were invited to share how they used that knowledge or tool during the week and how they perceived the results. This fostered reflections about practices, monitoring, and evaluation of efforts. For each workshop, the researcher brought a poster summarizing the content of each workshop to be displayed in the school. The objective of the posters was to have a physical remembrance of the previous workshops at easy access for the teachers during the week that followed each workshop.

Intervention Implementation Plan

The implementation plan outlined on table 6 was created to guide the sequence of the intervention, the content of each workshop, and clarify the connection of the content with the constructs of interest.

Table 6

Implementation Plan.

Date	Content	Data	Connection between content and learned helplessness, self-efficacy, and metacognition
Organizational workshop (preparation for the research)			
2/ 29	• Introductions • On site organization of the research (ground rules).	• IRB consent forms (see Appendix A) • Pre-test questionnaires (learned helplessness, instructional efficacy, and metacognition).	Perception of control through active participation in decision-making. Metacognitive knowledge and planning (to foster focused attention into one common and agreed upon goal, and self-regulation).
Construction of a common theoretical background to inform practice			
3/7	Learned helplessness	Initial interviews with participating teachers	Learned helplessness and self-efficacy definitions, components, sources, characteristics, how to identify signs in the classroom, how to address both, the relationship between the two constructs, characteristics of individual and collective states, characteristics of students, teachers, and schools with high or low self-efficacy.
3/14	Self-efficacy	Teachers are introduced to the students' behavioral checklist that they will use to register signs of helplessness in their classrooms. Teachers return the checklists at the following workshop.	
3/21	Metacognition Theory	Teacher bring their old lesson plans	Metacognitive knowledge. Development of awareness of the possibility of using their pedagogical practice to enhance students' control of their own

			learning processes.
Operationalization of theory into practice and implementation			
3/28 4/4 11/4	Metacognitive practice, design of lesson plan, Implementation of lesson plans, class observations, and feedback.	New lesson plans Final interviews with participating teachers Closer to the end of the week.	Operationalization of all theories into a real, practical tool to use in their classrooms. Having a structured lesson plan template agreed -upon by the team could contribute to the teachers' individual and collective efficacy with regard to the groups' capacity to address students' helplessness. Teachers with universal helplessness could rely on the lesson plan as an external source of empowerment. Knowledge of the theories operationalized in a concrete lesson plan could give teachers the confidence of knowing what to do, how to evaluate the effectiveness of what they do, and how to redirect the work as necessary to achieve their instructional goals.
Closure of implementation			
4/18	Final evaluation	Post-tests and final evaluation survey	Metacognitive evaluation of the research process, results, and projection of future use of the theories.

Guidelines for the Development of Collaborative Professional Development Workshops

Each workshop in this study was based on the guidelines by Lyndon and King (2009) and took into consideration all of the criteria below.

a. The information must be presented in a sequential and gradual fashion by a specialist using good quality materials.

b. The content must be meaningful to the participants and offer opportunities for immediate use.
c. Examples of practical application must be immediately followed by practice and coaching.
d. Content, activities and methods must be aligned with the participants' objectives, needs, and interests.
e. Change must include all of the teachers in the school, all of the teachers in the department, or all of the teachers of a given subject matter.
f. All the work during and after the workshops must have the support of the administrators.

Guidelines for the Evaluation of the Workshops

The final evaluation of the workshops by participating teachers also followed the recommendations of the same framework (Lyndon & King, 2009). A 25-item survey after the last workshop included elements a. through d. below. As this research did not include student evaluations, the impact of the intervention on students was evaluated through teachers' reports of perceived impact.

a. Participants' reactions.
b. Participants' learning during the workshops.
c. Quality of use of knowledge and skills resulting from the participation in the workshops in the participants' performance environment.
d. Administrative support for the changes which occurred as a result of the teachers' participation in the workshops.
e. Impact on the students.

Data Collection and Analysis

As the ultimate goal of formative and design experiments is the attainment of the research goal, the main purpose of data collection and analysis is to monitor the progress of the intervention towards the accomplishment of the goal. The quantitative data derived from the pre-and post-tests, and surveys; a total of 16 participating teachers completed the quantitative tests and surveys. The qualitative data was collected from a focus team drawn from the general participants. The focus team consisted of eight classroom teachers and one pedagogical coordinator. The purpose of the quantitative portion of the study was to identify the participants' levels of learned helplessness, instructional efficacy, and metacognition before and after the intervention. The qualitative part consisted of pre- and post-interviews with focus team participants, observational field notes, and class observation. Quantitative and qualitative data were compared for triangulation.

Instruments.

Pre- and post-tests.

Pre- and post-tests used to evaluate the participants' status with regards to learned helplessness, instructional efficacy, and metacognition are listed below.

- ***Learned helplessness in adults.*** Attributional style (ASQ). Instrument created by Peterson, Semmel, Baeyer, Abramson, Metalsky, and Seligman (1982) with Cronbach alpha 0.75 (see Appendix B). The questionnaire was previously translated into Portuguese and used by researcher Ana Maria Serra in 1999 with permission from the authors.

- ***Instructional Efficacy.*** Instructional efficacy was evaluated through the Teacher Efficacy Scale created and validated by Hoy and Woolfolk (1993). The scale focuses on both personal and general teaching efficacy (see Appendix C). The instrument was translated by the researcher and validated by two experts on the researcher's dissertation committee.

- ***Metacognition.*** Metacognition was evaluated through a slightly modified version of Jr. MAI. Based on the Metacognitive Awareness Inventory created by Schraw and Dennison (1994), researchers Sperling, Howard, Miller, and Murphy created and validated a shorter version of the instrument and named it Junior MAI. Jr. MAI has two versions, one for grades three through five, and another one for six through nine. The instrument includes items related to both awareness and regulation of cognition. Although this study's participants were teachers, not students, the second version of Jr. MAI was deemed appropriate. The researcher made slight adaptations when translating it into Portuguese so it would sound a little more adult-like (see Appendix D). The instrument was revised and validated by two expert members of the researcher's dissertation committee.

Surveys.

Two surveys were used during the intervention:

- *Lesson plan survey.* Completed by all participating teachers following teachers' analysis of the lesson plan. Purpose of this survey was to gain insights on teachers' approval of the lesson plan as a valid instrument for the operationalization of the discussed theories into their classroom practices (see Appendix E).
- *Final Evaluation survey.* Designed in accordance with guidelines by Lyndon and King (2009) and completed by all participating teachers at the end of the

implementation phase. The purpose of the survey was participants' (a) evaluation of the research process, and (b) perceived effectiveness of the workshops (Appendix F).

Interview protocols.

- Initial interview protocols were designed by the researcher with the purpose of gaining insights on participants' expectations for their participation in the research, and participants' perceived status with regard to their teaching, the environment, and the school population (see Appendix G).
- Final interview protocols were also designed by the researcher with the purpose of (a) gaining insights on participants' perspectives about their participation in the research, (b) possible impacts on themselves, their students, their teaching, and the environment, as well as, (c) the extent to which their expectations were fulfilled.

Data Collection Plan.

Table 7

Summary of data collection and analysis.

Questions	Data sources	Collection
Primary question		
How does participation in collaborative professional development workshops on learned helplessness, self-efficacy, and metacognition impact teachers' perceived efficacy with regard their capacity to address their students' helplessness?	**Quantitative** • Pre-post tests • Surveys	All through implementation
	Qualitative • Initial and final interviews **(**Focus team only).	During first and eighth week
	• Field notes (mainly about the context)	All through implementation

Secondary questions		
1. What are teachers' beliefs about their own capacity to mitigate learned helplessness before and after the workshops?	• Pre-tests	First workshop
	• Initial interview	During first week
	• Field notes	Before and during first two weeks
2. What are participating teachers' perceptions of the impact of implementing a lesson plan that includes Gagné's Nine Events of Instruction, the MUSIC Model of Motivation, and metacognitive strategies?	• Survey after lesson plan analysis	Seventh week
	• Final interview	After eighth week
	• Final evaluation survey	During eighth week
	• Field notes	All through implementation
3. From the beginning to the end of the implementation of the study, will there be a pre/post-test difference in teachers' (a) learned helplessness, (b) instructional-efficacy, and (c) metacognition?	• Pre- and post-tests.	During first and eighth workshops

Summary

The methodology of this study is congruent with the essential components of Formative And Design Experiments (Reinking & Bradley, 2008). In order to pursue the goal of helping teachers develop the necessary knowledge, skills, and tools to address student helplessness, this study benefited from the adaptive, iterative, methodologically inclusive and flexible nature of FADE. The expectation was that the triangulation of quantitative and qualitative data would provide insights on the consistency of the implementation process and provide a basis for the evaluation of the ecological validity of the study (Reinking & Bradley, 2008).

As presupposed by FADE's explicit framework, both the initial design of this study and the adaptations made during implementation relied heavily on information derived from the theories that oriented the entire process. Due to the existence of different orientations for the constructs that guided this research, this study used as references the following seminal works: Learned helplessness, as articulated by Abramson et al. (1978) and Peterson et al., (1993); self-efficacy, as articulated by Bandura (1979, 1987); metacognition, as articulated by Flavell (1979), Reeve and Brown (1984), and Schraw (1998); and the MUSIC model of academic motivation, articulated by Jones (2009).

Chapter 4: Implementation of the Intervention

This chapter represents the beginning of Formative And Design Experiment phase five, post implementation assessment. It provides a detailed account of the developments which occurred during the implementation of the intervention. As the experiment was intervention-centered and had the ultimate goal of addressing an objective problem affecting that specific population, this chapter demonstrates: (a) how the actual implementation compared to the initial implementation plan; (b) the changes made during the process to attend to the conditions of the environment; (c) the consistency of the change management process; and (d) how the implementation process contributed to the attainment of the research goal.

Research Goal

The goal of this study is to investigate if participation in collaborative professional development workshops on learned helplessness, self-efficacy, and metacognition would impact teachers' beliefs in their capacity to address students' helplessness.

Preparation for the Research

Obtaining research consent: After one year of contacts with the Rio de Janeiro School Board, on August 9, 2011, the research coordinator of the Rio de Janeiro Municipal School Board issued a consent letter for the research to be conducted in one their schools (see appendix H). After the consent from the Rio de Janeiro School Board, the process of approval by the Virginia Tech Institutional Review Board (IRB) was initiated. Virginia Tech's IRB consent was issued on February 16, 2012 (see Appendix I).

Developments Through the Phases

Formative and design experiments phase 1: Preliminary phase.

The preliminary phase included site selection, meeting with stakeholders, clarification of participants' interests and needs, final definition of research goals, and planning for subsequent phases. The preliminary phase of this study occurred during several meetings with key stakeholders: one meeting with a school board official at the school board head office, and three visits to the school site. Meetings at the school included school administrators, faculty, and some staff members.

Meeting with the school board official.

The meeting with the school board official occurred at the school board headquarters on July 4, 2011. The researcher introduced the study's preliminary design and goal to the school board official responsible for the experimental seven-hour-a-day schools. Most of the schools in the Rio de Janeiro School System operate on a four-hour-a-day schedule. However, low achieving schools located in areas of conflict in disenfranchised neighborhoods adopted a system of seven hours of school activities a day. The objective of the project was to enhance learning outcomes, reduce discipline problems, and increase retention by means of keeping students away from some negative influences of the environment outside the school. After the researcher's presentation, the school board official identified several commonalities between the school board goals and the research goals. Common interests included: (a) necessity of continuing professional development focusing teachers' beliefs in their capacity to teach that specific population; (b) empower and motivate teachers to believe that, with appropriate pedagogical practices, they could impact students' learning outcomes and the classroom atmosphere; (c)

develop the concept of reflective practice among teachers; (d) equip teachers to demonstrate to the students that they have the capacity to learn; (e) use metacognitive strategies to improve teaching and learning; (f) work with teachers to impact students' achievements; and (g) change teachers' beliefs that the student is the only variable preventing better school achievement.

After discussing some common goals, the school board official chose one of the seven-hour-a-day schools, which was also part of a program called "Schools of Tomorrow." This is another experimental program implemented by the school board in low achieving schools in areas of high indices of violence (the Schools of Tomorrow Program is described in more details later in this chapter). This particular school was chosen for this study for three main reasons: first, it has figured among the lowest achieving schools in the system for several years; second, the school board has had difficulties in successfully implementing interventions at that particular school; and lastly, the school administrators were open to novelty, and willing to cooperate with the research. The school board official called the school principal on the telephone and introduced the researcher who talked briefly to the principal and scheduled the first visit to the school.

Visits to the school.

Two days after the telephone contact the school was holding an end-of-semester evaluation meeting involving faculty and some administrative staff. The principal allowed the researcher 10 minutes to introduce the research project to the school community and observe the faculty's reactions. Based on the faculty's interest, the school administrators (principal, deputy principal, and pedagogical coordinator) would decide whether or not the research could be conducted at the school.

On July 6, 2011, the researcher presented the research project to the school's administrators and faculty. The reactions of the teachers and pedagogical coordinator were immediate and positive. They had never heard about learned helplessness before. But at the first explanation of the term, they started acknowledging that they knew what it was like; they experienced that very often in their classes but they could not address the problem because they did not know it was a syndrome and that it could be reversed. They were so interested that it was difficult for the principal to keep the presentation within the ten minutes previously agreed. The pedagogical coordinator called a coffee break to discuss a way that the researcher could come back to the school to make a longer and more thorough presentation of the research goals, design, and responsibilities of participants. After the coffee break the principal invited the researcher to return to the school in the following week and do a presentation for the teachers who demonstrated interest in the topic. The presentation would last 45 minutes and would occur during the teachers' "center of study" time. Every Wednesday, at that school, teachers have a period of 90 minutes to commune in the teachers' room. Normally, they used that time to receive instructions on the school board deliberations, plan their instruction, and do paperwork.

On July13th, a week before the winter break, the researcher made a presentation for the teachers who were curious about the research project. The presentation focused on the research goals (already in accordance with the school board goals), the collaborative and adaptive nature of the research methodology, and a brief description of the main theories and strategies that would be developed during the implementation phase. The school had approximately 30 teachers and 20 of them attended the presentation. All 20 teachers completed a survey indicating interest in participating in the research. Eighteen teachers indicated that they believed that the research had the potential of impacting teachers' classroom practices. Nineteen teachers indicated that

they believed that the research had the potential to impact students' learning. Nineteen teachers indicated interest in participating in professional development workshops. Fourteen teachers indicated interest in participating in the research focus team. In face of the teachers' interest in the research topics and the pedagogical coordinator's beliefs that learned helplessness was, indeed, affecting students and teachers at that particular school, the pedagogical coordinator invited the researcher to return to the school once again to give the teachers a hint of how to deal with some aspects of learned helplessness.

On July 20th, the researcher used the teachers' center of study time once again, but this time, the presentation was split into morning and afternoon groups. A group of teachers was available in the morning and another group was available in the afternoon. Two groups with fewer participants was, actually, more manageable and facilitated collaborative work. Both in the morning and afternoon groups, the researcher introduced the ABCDE method of desensitization of automatic thoughts that cause emotional arousal in students with maladaptive attributional styles (Seligman, 2006). That activity was chosen because: (a) this activity addressed one of the most common elements of learned helplessness – maladaptive attributions; (b) it was intended to relieve emotional distress and diminished personalization; (c) it was easy to understand and apply without going deeply into complex theoretical concepts; and (d) it could be applied to other situations in the future. Teachers applied the method on themselves and afterwards they evaluated each other. Teachers confirmed the interest they had demonstrated in the previous visit by attending the workshop, participating actively, and providing examples of situations that they identified as being possibly related to learned helplessness. This was a valuable pilot both for the school, the participating teachers, and for the researcher. After the third visit to the school, it was confirmed that the research goals were aligned with the goals of the school board and the school

community. The school administration allowed the researcher to use the teachers' center of study time as well as the school resources necessary for the workshops. Pictures and video-taping, identifying school staff, faculty, or students were not allowed by the school board.

Formative and design experiments phase 2: Demographic data collection.

Demographic data collection was completed through observations registered in field notes during all of the researcher's visits to the school board, and the school facility, in July 2011. The identification of potential research participants and research focus team started to take shape during the second visit to the school. However, as the implementation of the research did not occur until the beginning of the following school year, demographic data was completed later. The descriptions below contain data collected during phase one of the research (July 2011) and the beginning of phase four, implementation of the intervention (February 2012). The brief descriptions and pictures included in this chapter are relevant to establish the current status of the school context in contrast with the teachers' state of mind about the school environment. The observational data collected during the implementation phase (February 29 through April 18, 2012) can be found after the description of the workshops later in this chapter.

School location.

The school is situated just off of a main avenue that connects the suburbs to Rio downtown. It is located in a low income neighborhood about one hour by car from Rio downtown. There is plenty of public transportation to several areas of the city. Most students live nearby and walk to school. The school building is located between a favela (slum) and an apartment complex with three floor apartment buildings subsidized by the government for low-income residents. From the school gates and windows, it is possible to see drug dealers carrying

guns walking freely in the streets to safeguard their territory against the police or competing gangs.

School Facilities.

The school building has four floors and no elevators. The school does not have any students with physical disabilities. The top floor is used as an amphitheater. The school does not have a sports facility. There is a small external patio at the back of the school where students play when the weather is good. The area is empty and dusty and children get dirty when they play there. Physical education teachers use this external area for their classes. The school has a reading room equipped with fiction and non-fiction books for all grade levels and four desktop computers connected to the internet; and a computer lab with 20 computers, a color printer, a white board, overhead projector, and a 50-inch flat screen TV that has not been installed yet. Neither the computer lab nor the reading room was frequently used. Teachers attributed the underutilization of the resources to the difficulty of handling students' behaviors in these areas.

Figure 6. *Reading room*

Figure 6. The reading room has classic and popular books for all grades. However, the space is small, so teachers do not bring students to read in this room. The students select their books and go back to their classrooms, which usually causes a huge trouble for the teacher since the students tend to behave in an uncontrollable way, especially outside the conventional classroom.

Figure 7. *Computer room*

Figure 7. Six of the eight workshops in this study were held in the computer lab. Every time we used the room, it was disorganized and dusty, but available. One of the workshops took place around a pool of water in the middle of the lab. The day before, someone tested the sprinklers, water ran into the lab, and until the end of the following day there was nobody available to clean it. The researcher arranged the desks around the water pool in a "U" shape to avoid the water, turned the lights off to avoid distractions, and the workshop proceeded as usual. None of the participating teachers seemed bothered by the water. No-one ever commented about it.

The school has wireless internet and the school board created a platform with open source online lessons (educaopedia.com.br) that the teachers can use during their classes and students can access at home. Most participating teachers declared that they did not use the platform because the passwords they had received to use the system did not work and they did not request new ones. They also added that they did not use the instructional technology available because the students "went wild" while they tried to set up the equipment. Teachers were afraid that the students would destroy the equipment. Very few teachers accessed the school board webpage and blogs with useful information for schools and teachers. Most teachers at this school rely solely on the information they receive from the school leadership. One of the inspectors was responsible for the electronic equipment. He always had all of the necessary cables and controls.

He was very helpful and provided all the assistance necessary for the workshops, but when he was not at the school, it was complicated to find the equipment needed.

Figure 8. *Educopédia offers on online lessons and training opportunities for teachers*

Figure 8. Educopédia (educopedia.com.br) is a platform with online lessons for teachers and students to access in class or from home. Lessons are developed by teachers from the school system who earn a stipend to create them. They follow the same curriculum and are open to other school systems in Brazil and other Portuguese speaking countries. In this platform teachers also find courses and opportunities to update their knowledge.

The classrooms were furnished with individual desks and chairs made of hard blue plastic. Each classroom had a bookshelf with grade books (books are provided by the school board); a locker (for the teacher), which contained materials for science classes; a white board; and a green board. All of the classrooms were well ventilated with large windows and ceiling fans. The computer lab and library were air-conditioned. The school had two professional photocopiers and several printers with unlimited copies per teacher. Apart from the conventional class material, teachers could request specific resources for their subject matter.

The early childhood classrooms were more organized and cleaner than the middle school classrooms. The greatest signs of misuse of resources were observed in the middle school classrooms where students threw trash on the floor, despite the presence of trash cans. Books were sometimes torn into pieces and left on the desks or on the floor. Some desks had footprints on them.

Figure 9. *Classrooms*

Figure 9. Early childhood classrooms are better organized and cleaner than the middle school classrooms. Teachers declare that as students grow in age, they become more disruptive.

Despite the fights that frequently happened in corridors and in the classrooms, the students did not damage other students' work. All of the bulletin boards and walls displaying student work were untouched. The school has hardly any graffiti or doodling on the walls. During rebellions and chaotic situations none of the students got hurt and needed medical care. This might indicate that the students were staging the fights in order to disrupt the school routine and stop classes from happening. The students did not seem to have the intention of hurting one another. Some laughed during fights as if they were having a great time. It was common to see the students commenting on and even mocking the way the school officials and faculty dealt with the situation. Disruptions were punished by suspension; however, being out of school for a

few days was considered as a reward for the students who would rather be playing freely outside than attending classes.

Observational data from field notes regarding social interactions indicated that the students were not disciplined; some demonstrated intolerance and irritability and reacted violently at the least sign of physical contact with other students in line or in class. During class, two groups could be observed: one group of very loud students, who moved all the time, did not seem to concentrate in class, talked to each other during class, played, told “funny” jokes to make others laugh, pushed other students’ chairs, pulled girls’ hair to distract them, stood up and walked, even danced and sang during class. Despite the disruptive behavior, these students usually participated in class. They yelled their answers, they spoke over the teachers’ voice, they competed to answer faster than others, they argued with each other during the answering process, but they demonstrated their understanding, and most of the time their answers were correct.

The other group included more female students; they were quieter, they only spoke with the peer sitting next, immediately in front, or behind them. They doodled on their notebooks and wrote messages to each other most of the class time. When asked to participate, it took them a long time to situate themselves within the class topic or to locate the answers; this demonstrated that although they were not disrupting the class, they were not engaged either.

Very few students displayed appropriate behavior and participated actively in class at the same time. After one of the disruptions, a student turned to the researcher observing the chaos from a distance and said: “Write it there auntie, this is fun - that’s what makes me come to school every day. Free fun.” At the same time, a teacher protecting the door of her classroom started to shake her head in disapproval of what the student had said. She had an expression of disgust in her face. The inspector whose role was to contain the students was pale and speechless. The

teacher pointed at the inspector and said that he should quit his job because he was too young and he was going to develop heart problems if he continued at the school. She added that the inspector, a young man, in his twenties, was a happy man when he started to work at that school; he became stressed and unhappy. The inspector muttered that those were not students; they were animals, they were lost, and nobody could control them. He looked at the researcher and said that some teachers managed to teach, others gave it up, and some could only teach if he sat by the classroom door. The only time the researcher observed a student breaking something in the corridor was in the course of a collective fight. One of the students fell onto a trash can hanging on the wall. Another student picked it up and tried to put it back together immediately.

Figure 10. Corridor on the third floor

Figure 10. Teachers use the walls outside the classrooms to display student work. The work is not destroyed and the walls do not have any graffiti or doodling. The floors, however, are dirty. Students do not use the trash cans as much as they should.

School population.

The school has approximately 30 teachers on average for 320 students, one principal, one deputy principal, one pedagogical coordinator, one coordinator for the after-school workshops designated by the program “Schools of Tomorrow,” a few administrative employees (average three on site every day), three discipline agents (inspectors), three cooks, maybe two cleaners,

and a nurse (designated by the program Schools of Tomorrow), and some other professionals working at the school doing different sorts of jobs, from cutting the grass to changing furniture.

The Municipal school system in Rio de Janeiro has approximately 300 day-care units in which they serve to educate students from as early as 3 months of age. Most of the schools operate in a pre-K through 9th grade range. Students' average ages vary from 5 to 15 years old. Most of the general participants in this study were middle school teachers. However, the research team (eight teachers and pedagogical coordinator) had equal numbers of elementary and middle school teachers. There was at least one participant representing each grade in the K-9 spectrum.

School environment.

The school had two gates: one for cars (school staff and faculty only) and one for pedestrians. Beyond the first gate there was a door made of iron bars that was constantly locked. An inspector was usually stationed there. She opened the gate for the students, teachers, and visitors. Parents, coming to the school to bring their children, or to attend meetings, were barred at this door until they could be seen by the person they were there to visit. When parents went inside, they were received by a school official or a teacher. Sometimes they were taken into the teachers' room and sometimes they stood in the corridor or doorway and talked their problems over in front of other people. The school did not seem to have a system or a protocol in place for parent-school interactions.

The elementary school students formed a line downstairs to go upstairs for classes. Elementary teachers usually held the hand of the smallest child in the class and led the class upstairs. The middle school students went freely. They did not have discipline to go up or down the stairs in an orderly fashion. Some ran and pushed others. At the dining-area, students were free to be themselves. Some threw the food they did not like on the floor. Elementary school

teachers usually stayed behind a partition watching their students from a distance while they ate, but they did not interfere with the students' behavior, unless they could hurt themselves or others. Older students were unattended. Students stayed in line for their meals. They picked up their meals from a window that connected the kitchen to the dining-area. Students kicked or punched each other in line very often. There were no apparent rules or code of conduct for expected behavior in the dining-area. The dining-area had enough tables and chairs to accommodate the students. There was a bathroom nearby where students could wash their hands before meals, and a water fountain with cool filtered water. The students received breakfast, cooked lunch, and an afternoon snack every day. The diet was balanced. The cooks received the week's menu from the nutritionists hired by the School Board. The food was freshly cooked. Milk and fresh fruit were served at least once a day. Most teachers and other staff members ate at the school on a regular basis. Some teachers stated that the food was good and healthy.

Schools of Tomorrow.

The data presented here were collected from observations at the school, conversations with school officials, an interview with the coordinator of the program in the school, and an article published by the New York Global Partners in May 2011. The Rio de Janeiro Municipal School System has 1,064 elementary and middle schools (grades one through nine) and 300 day cares with children ranging from 3 months to five years old. The elementary school system has nearly 700,000 children. Approximately 28,000 of the students from grades 4 to 6 are functionally illiterate. One hundred and fifty-one (151) municipal schools are located inside favelas (slums) with high indices of violence where the school is the only governmental presence in the community. Since 2011, the police implemented a public safety program in some areas of the city, called Pacification Program. They have controlled the territory of several of these slums,

re-establishing a certain public order. At the same time, the school system developed and started to implement a program called Schools of Tomorrow designed for those 151 schools located in areas of great violence. The program intended to make the school a place of safety and excellence for the students and the community alike. The goals of the program are:

- Increase the schools' IDEB (Brazil's index for education quality) to a level equal or superior to 5.1 (for grades 1 through 5), 4.3 (for grades 6 through 9) by the end of 2012.
- Ensure that a minimum of 95% of the students under the age of 7 are truly literate by the end of 2012.
- Reduce functional illiteracy to less than 5% in grades 4 through 6 by the end of 2012.
- Reduce the number of school-age children out of schools to 10% or less.

At least one of these goals was already accomplished: the IDEB of the Rio de Janeiro Municipal Schools assessed in 2011 and published in 2012 was 5.4 for the elementary schools and 4.4 for the middle schools. Calculations of the index are based upon the results of the students in the Portuguese and Mathematic standardized exams combined with the approval rate, which means the number of students who were promoted to a higher grade.

The programs implemented in the Schools of Tomorrow are:

1. Bairro Educador (The Educating Neighborhood): The aim is to strengthen the bonds between the school and the community.
2. Saúde nas Escolas (Healthy Schools): The city's department of health attends the needs of the students to ensure they are ready to learn. The Schools of Tomorrow had a nurse present at the school 20 hours a week.

3. Professional Development to equip teachers to teach that particular demographic.
4. After class programs: students stay at the school seven hours a day instead of the four hours of the regular school system. The school community can choose a series of workshops of interest to the students to create a safe and stimulating environment. The workshops include cultural and sports activities, such as dance lessons, graffiti, martial arts, soccer and others.
5. Experiment-based science education: the school receives all the resources for science experiments to stimulate curiosity, hands-on experiences, and sense of fun to learn.
6. Remedial classes: school teachers or tutors hired for this purpose give children individualized support for learning in their areas of difficulty.

In the school where this research was conducted, traces of items 2, 5, and 6 were observed. With regard to Healthy Schools, there was a nurse technician in the school site three days a week. Nevertheless, one of the teachers mentioned in the interview that it was very hard to get services for the students:

> …and we face a lot of difficulties, you go, complain, beg, implore, try to forward the student to a given service, and the answers is always, “you can’t”, “there isn’t”, and whenever “there is” it doesn’t really happen. There is always a wall, and this wears you out.

With regard to the science classes, there is a locker in the classrooms for the science resources. The science teacher mentioned using the material; however, she complained that she did not have proper training on the methodology. Besides, the students’ behavior and the time allocated for the classes inhibited frequent use of the experiments. A participant said:

> This book is full of experiments, the school board sends the exams - so I feel like I have fallen with a parachute in the middle of this…I did the workshop to learn

> how to use this book. It was offered by the school board, but it was only a one-time training, they talked about two themes in the book, and I thought, I thought, it was not very useful… In our reality here, the theory is good but the practice is not feasible…The experiments takes a full class. You cannot do the practice, theory, and activities in one class. This is time consuming (Tatiana).

As to the academic support classes, the elementary school children benefit from that; several elementary teachers mentioned the support classes in the interview. Two teachers reported benefits of their participation in the research on the way they worked with the students in the support classes, because at that time they could give individualized attention to the student. As to the other items, I did not perceive any signs of their existence in the school. When I interviewed the coordinator of the program at the school, he mentioned that the school had graffiti and judo workshops, that he helped teachers and inspectors deal with discipline problems, he used motivational techniques to diminish students' behavioral problems, and he was at the school 20 hours a week. I was at the school for eight weeks and I only met the coordinator once, when I interviewed him. The interview was conducted in the teachers' room, in the presence of several teachers. When the interview was over, I asked the teachers in the room if they had observed those actions and they said that they had not, that maybe those activities happened on days and times where they were not at the school. Not all teachers worked at that school every day of the week.

With regard to item number 3: Professional Development to equip teachers to teach that particular demographic, this school was chosen for this study because it participates in the seven-hour program and the Schools of Tomorrow. But during the interviews, teachers complained that they had not received training to work in these schools and they did not perceive any methodological difference between the school board orientations for the work in this school:

> "The Schools of Tomorrow have seven hours of classes a day but the methodology is the same as the other schools. I use the same methodology as I do in any other school. The difference is that they have less prior knowledge, you need to use easier language, you can't go to deep into the subjects because they won't understand it" (Tatiana).

Faculty.

The school officials stated that they had approximately 30 teachers; however, these teachers were not enough to cover all subject matters. The school did not have a fixed class schedule until April because the existing teachers needed to cover all the school hours. Trainees from teacher education programs in the city were used to fill in for some subject matters, such as Portuguese. There was a balance between male and female teachers, older and younger teachers. Their age varied from late twenties to sixties. Most teachers chose to work at that school for some personal convenience. The school is located near the main road with plenty of transportation to their diverse dwelling places. When teachers are initially hired by the municipal system, they become civil servants and they have job stability from the beginning (instant tenure). They must stay at their original school for three years before they can request transference to another school in the same system. Only three participating teachers have been working at the school for less than three years; most of the teachers have been there for more than five years by their choice. Some teachers have worked at that school for over 15 years. Only one elementary school teacher did not have her college degree. She did teacher education at the high school level, as it used to be until the 1990s. However, she has been a teacher at this school for more than nine years; she is a very enthused and experienced professional.

Students.

Students were described by the school community as unmotivated, undisciplined, disrespectful, noisy, disruptive, and violent. A participating teacher said: "Most students come

from one-parent or divorced families, quite a few are brought up by a grandmother, and some do not even have a family." Another teacher said that she was shocked when she overheard a third grade student comment that she had had sexual intercourse. The teacher planned a class to discuss sexuality with that particular class and she found out that most of her third-grade female students reported having had voluntary sexual experiences with older males. Brazil does not have a statutory rape law. According to the teachers, parental involvement was almost non-existent. The teacher did not talk to the students' parents about that issue. Teachers expressed sadness about the situation through their words, the tone of their voices, and facial expressions. They paused frequently to catch their breath when talking about the students' lives outside the school. They mentioned that they did whatever they could to help the students, but they did not believe they could save the students from a bad future.

Teachers demonstrated low sense of efficacy with regards to helping the students have a better future through education. Phrases such as these were frequently heard from different members of the school community: "What can we do?" "There is nothing we can do." "The students don't let us teach." "Nothing we do works with these students." "Nobody can help these kids." "They look like kids, but they are not, they have experienced things that we cannot even imagine." "Very few of these students will have a future." "They don't want to learn anything; they are here because their parents are earning government money." "Their own parents can't deal with them anymore." "Some of these students already use drugs." "Some of these students are dealing drugs already." "That student over there, he is a thief." "That student over there is the worst of all, but his father is one of the 'guys' (referring to drug dealers)." Some teachers demonstrated caution when dealing with students who could be involved with drug dealers.

Researcher's interaction with the students.

The researcher interacted with the students in the dining-area, corridors, and during class observation; the research did not directly involve students. Students always entered the computer lab when the researcher was preparing for the workshops. They always asked if the researcher could teach them how to use the computer. The researcher's interactions with the students were very positive because they were curious about the research project and the researcher herself. They wanted to know about life in the United States. Their teachers had told them that the researcher had studied in a public school and was now studying in the United States. A group of fifth grade girls came to talk to the researcher every week. When the researcher asked them what they wanted from her, one of the students said: "Our teacher said you can tell us how to succeed. How can I succeed? I really want to succeed." Every week a different group of students came with the same question. They helped the researcher carry her workshop materials to the car, helped connect the equipment, and offered to do favors if needed. The researcher talked to them about efforts, about self-regulation, about not giving up, about being optimistic, doing their best, staying at school, respecting teachers, etc. On the last day so many children hugged the researcher that the whole group fell to the ground. It was not a fight, it was a lot of fun, and their teacher was in the hugging party as well.

The researcher's only interaction with a whole class was after an unfortunate incident. There was a rebellion in one of the classes that prevented the researcher from observing one of the classes. It was the last chance to observe classes. The teacher had prepared her class very diligently and she was very frustrated because her class could not be observed and she could not get feedback from the researcher. Right after the atmosphere was calmer, the researcher went into another classroom to observe; the students were extremely noisy and agitated because of the

earlier event. The teacher who was going to have the class observed was nervous. The teacher told the researcher that she would like to teach that class and she would like to receive feedback on her planning but she was afraid the students were not going to allow her to teach that class. The researcher offered to talk to the class. The teacher accepted. The researcher addressed the class, talked to the students about what had happened, how they could decide whether or not to allow that incident to affect them, and how they could sit down and attend the class and learn how to take control of their lives. They listened, sat down, and allowed the class to happen. The teacher could teach the whole class; the researcher could observe the class and give the teacher feedback.

Formative and design experiments phase 3: Assessment of participants' status.

The assessment of participants' status relied on three data sources: field notes from the researcher's informal conversations with school board officials and school community (Principal, pedagogical coordinator, teachers, administrative staff, cooks, cleaners); initial and final interviews with focus team participants; and pre- and post-tests. The pre- and post-tests measured the participants' levels of learned helplessness, instructional efficacy, and metacognition before and after the intervention. Results of quantitative and qualitative data are included in Chapter five and discussed in Chapter six.

During the qualitative data collection (first three visits to the school in July 2011) teachers and school administration declared that they had never heard about learned helplessness or self-efficacy. Some teachers had studied about metacognition in college but none of them had ever used it in the classroom to improve learning. The researcher asked some school officials and the school board individual who helped choose the school why they thought there was occurrence of helplessness among teachers and students and if they had never heard of learned

helplessness before. They unanimously stated that, from the moment the researcher started describing the syndrome, they could associate the symptoms and the deficits with their experiences in the schools. They compared the students' environmental conditions and behavior to the descriptions of learned helplessness and found similarities between both. They started giving names to situations they encountered at the school which before they did not know how to articulate or address. They believed the teachers were also affected by learned helplessness because, despite having more material resources than ever before in the history of the school system, teachers constantly affirmed that nothing they did would work. The school board official and school leadership stated that teachers may have developed low expectations for results after they tried so many things before and they had failed. Teachers started to believe in the futility of their actions and gave up implementing new strategies, or even old ones that used to work before. The school board had been trying to get the teachers, at that particular school, to implement ten classroom management techniques related to student behaviors since the previous year without success. This may indicate lack of motivation to try something that they do not expect to work (Bandura, 1997).

Both teachers and school officials stated that they believed that the students were affected by learned helplessness because they came from a reality of failures. They did not want to learn. They did not perceive the importance of education. They used denigrating language to describe their learning abilities; they did not even try to learn. Teachers declared that they had success in other schools but not at that school because nothing really worked there. One of the school officials said: "I think there are children here suffering from this syndrome, learned helplessness." The older teachers identified themselves as being affected by learned helplessness because, after so many trials and lack of success, they felt like nothing they did would make a

difference. Some expressed how hard it was for them to get up on a Monday morning and go to work knowing that it could only be one more bad week. One participant said that: "Today I have the learned helplessness syndrome - today, I feel almost useless - I think I speak to nobody - at the school and out of school, I think we don't have, (pause) like, (pause) we don't have (pause) any relevance."

When teachers were asked why they thought students were affected by learned helplessness if they had never heard of learned helplessness before? Similarly to the school officials, teachers replied that when the research topic was introduced to them they could make an automatic connection between the theory and their everyday experiences at the school. One participant said: "I did not know about learned helplessness - it is new for me - it just makes a lot of sense - because as I said before - when you work with very disadvantaged people - you see a lot of failure…we really need these theories to improve our practice and not think that there is only failure, we are surrounded by failure."

Formative and design experiments phase 4: Implementation of the intervention.

Chronology, content, and development of the workshops.

All teachers working in this school were allowed to attend the workshops. Attendance was only taken for the nine participants of the research team. Two research team participants were absent from two workshops. None of the focus team participants was absent in two consecutive workshops. Seven focus team participants attended all of the workshops. The lowest number of participants was 13. The usual number of participants ranged from 16 to 23.

Research Journal and Field Notes

The researcher registered the events which could enhance or threaten the attainment of the research goal in a research journal. The systematic journal entries were used to monitor the progress of the intervention, keep track of the research data, and orient possible changes to the initial implementation plan. Field notes were less systematic and consisted of observational data related to the research, the school environment, or the participants. A plan of the structure of (a) the workshops, (b) the objectives of each workshop, (c) sample workshop planning, (d) sample resource used in a workshop, (e) sample the journal entry, and (f) sample field notes can be found in Appendix J.

Several events concurred for the need of changes to the implementation plan. Without these changes the attainment of the research goal would have been in jeopardy. The implemented changes were based upon iterative feedback from the environment and the participants. Change rationale was substantiated by the theories that oriented the research process as recommended by FADE guidelines (Reinking & Bradley, 1988). The changes did not inhibit the completion of the research project within the initial timeframe. However, the initial plan needed to be altered. The changes happened during workshops four, five, six, and seven. The initial plan showed that (a) metacognition would spread out through workshops four and five and (b) the activities related to lesson planning would use workshop six and part of workshop seven. In the actual implementation, workshops four and five consisted of a reality testing experience, workshop six consisted of metacognition, and workshop seven consisted of lesson planning. Table eight contains a description of the developments of workshops one, two, and three including the rationale for the inclusion of the reality testing experience.

Table 8

This table contains (a) the activities planned and the activities actually conducted during the implementation phase, (b) the changes made, (c) the rationale for the changes, and (d) the consequences of changes (how the changes contributed to the attainment of the research goal).

February 29th, 2012 - Workshop 1: Organizational work (preparation for the research)

Initial plan:	**Actually accomplished:**
Introductions, show Virginia Tech Video, organization of the research (ground rules, roles, and responsibilities), participants complete IRB forms and pre-tests.	Introductions, organization of the research, roles, and responsibilities, 19 participants completed the IRB forms. None of the participants completed the pre-tests.

Events that motivated change:
It was the first week of classes of a new school year. The school lacked teachers. There were fewer teachers than the previous year. Nobody could tell exactly how many teachers were back. But some teachers who were transferred to the school refrained from staying due to the students' behavioral issues. Therefore, the school did not have a fixed class schedule. The remaining teachers came to the school every day without knowing which grade/class they were going to teach - planning was complicated. All teachers looked sad and sounded upset, but some teachers were enraged because student behaviors were worse than the previous year. Teachers were complaining especially about some particular students whom they had requested to be expelled for bad behavior in the previous school year and these particular students were back in the classroom this year. A teacher said: "I am so disappointed! I am the one who never complains – I am the one who is criticized for being too caring and for having the best rapport with this particular class – but today – I don't know – today – I just couldn't – they were (pause) I don't know what to say." He sat down with his eyes on the ground, folded arms, and just nodded continuously without saying anything else.

The pedagogical coordinator needed to talk to the teachers and explain why the students were back, why they could not be expelled. She asked teachers to give the school year a chance. They were just starting the new year and they could not begin by thinking that it was already worse than the previous year. She said: "My people! You can't decide now that the year will be bad. What are you going to say in October or in December, at the end of the school year when you are tired indeed. You are already helpless, look at Elza here!" At this point, when my name was mentioned, I immediately stood up and started to talk about learned helplessness: how helpless individuals make projections of future failure and undertake actions to fulfill the prophecy of future failure, and I started to list how the energy of a new year and the innovations they were receiving could help them create a whole new environment by taking the control of the situation.

Rationale for change:
After speaking about learned helplessness and how teachers could take the control and make the new year work, we introduced ourselves - 19 teachers completed the IRB forms and 8 teachers signed up to participate in the research focus team. I did not have time to play Virginia Tech's

video and the teachers did not have time to complete the pre-tests. The pre-tests were taken home to be completed and returned the following week. The atmosphere was very negative and tense.

Consequences of the change:

1. The post-tests would also have to be taken home and returned the following week, so as to keep consistency between the conditions of the pre- and post-tests.
2. The afternoon group would also have to follow the same procedure as the morning group for the pre- and post-tests.

How change contributed to the attainment of the research goal:

Allowing participants to complete the questionnaires at home might not change the results dramatically. They could have more time to complete the tests than they would have during the workshop. But it was the researcher's judgment that it was more important to use the heat of the moment to contextualize learned helplessness than to make them fill out the questionnaires. A very positive rapport was generated. One of the teachers stated that she appreciated the fact that the researcher accommodated the situation to make them feel better about the new school year.

Differences between morning and afternoon groups:

Most of the teachers in the morning group also attended the afternoon workshop since they were available. The afternoon group was calmer and, apart from the pre-tests, we could do all the activities including the Virginia Tech video.

March 7th, 2012 - Workshop 2: Learned helplessness

Initial plan:	**Actually accomplished:**
1. Collect the pre-tests	1. Discussed learned helplessness
2. Discuss learned helplessness.	2. Introduced the student behavior checklist
3. Introduce the student behavior checklist to identify possible signs of helplessness among students (Appendix P)	3. Gave each teacher a checklist to observe their own classes and take notes of possible signs of helplessness.
4. Give each teacher a checklist, show them how to use it, and request them to return the checklists the following week.	4. Scheduled initial interviews with focus team teachers for the course of the week.
5. Schedule initial interviews	5. Only six teachers returned the questionnaires.

Reasons for change:

There were no substantial changes. Both morning and afternoon groups attended the workshops. The only thing that did not work was that only six out of 19 teachers returned the pre-tests. Some forgot to complete the tests, others forgot to bring them back, and some lost them. Fortunately, I had extra copies to give them.

Along with the fact that they did not return the pre-tests, teachers did not participate voluntarily in the discussions. They attended the workshop as if it was a class. They called the researcher "teacher" several times and referred to the workshops as "courses" or "lessons."

In the following week, I talked to them about active participation and the differences between the collaborative workshops as part of a research project and classes. The workshops in this study were not a training opportunity but a way to investigate a phenomenon of interest to the researcher but also to them. I reminded them that the research goal was derived from iterative interactions with the school community. That the results would depend on joint efforts. The

researcher had some contributions to make but at least half of the contributions would come from them. Together we would produce the final results. Final results were not random, but a consequence of how we conducted the process together.

Rationale for change:
Teachers needed to participate actively and take ownership of the research process. They needed to feel responsible for the data and for the end results. The process was supposed to be collaborative and teachers needed to feel part of it and co-responsible for the implementation, monitoring, and evaluation of the results. They needed to switch from a passive to an active role.

How change contributed to the attainment of the research goal:
If the teachers continued resisting active participation, did not bring spontaneous contributions to the discussions, and failed to produce data (forgetting to return forms and materials), the goal of the research would be in jeopardy. The research would represent one more failure experienced by them and that could prompt more learned helplessness.

March 14th, 2012 - Workshop 3: Self-efficacy

Initial plan:	**Actually accomplished:**
1. Collect remaining pre-tests 2. Re-schedule interviews that may not have occurred in the previous week 3. Collect students' behavior checklist 4. Give teachers a printed copy of the Article about the MUSIC Model of Academic Motivation to discuss it in the following class. 5. Discuss self-efficacy, relate it to learned helplessness, and elicit examples and cases from the teachers.	1. Only three more pre-tests were returned – a total of 9 out of 19. 2. Only 3 teachers completed and returned the student behavior checklist. The others either did not understand how to use it, forgot to use it, forgot to bring it, or lost it. 3. Only a few teachers participated actively in the discussions. They enjoyed discussing self-efficacy more than learned helplessness. They liked to know that they could work with something positive.

Reasons for change:
Teachers in the Municipal system were on a strike on that day. One of the teachers came to the room before the workshop started and told me that she would have to go somewhere else for a work-related meeting. I had an alternative plan for the workshop in case the teachers did not show up. However, 13 out of 19 teachers showed up for the workshop, despite the strike. Some did not work, but attended the workshop. I decided to follow the original plan. Even with most teachers present, some teachers suggested that we should postpone the final activity of the workshop to the following week. This activity consisted of a comparative chart with characteristics that defined highly efficacious and low efficacious schools. I agreed with their suggestion because I could use the chart to review both learned helplessness and self-efficacy. We used the remaining time to discuss the perceived performance discrepancy.

The fact that they came to the school to attend the workshop on a strike day was an indication that the teachers were committed to their participation in the workshops. Two teachers stated that they did not work that day, but they came to the school to attend the workshop. They did not display the same commitment with regard to active participation, in terms of conducting the actions necessary out of the workshop space, and returning the research documents.

The pedagogical coordinator had been trying to get the teachers to implement 10 classroom management techniques related to student behaviors since the previous school year without success. Teachers complained about student behavior but, when they had a chance to act upon it, they did not implement the techniques. They knew the relevance of the techniques but they chose not to implement them. This was evidence that the behavior they were displaying with regard to the research activities was a recurring one. Besides, the school board official (who chose this school for this study) stated that the school board had had difficulties getting the teachers to try out new strategies. So, just talking to them might not be enough. Perhaps they could benefit more from a deeper reflective experience about their performance.

I started a discussion about performance discrepancy and elicited information about how they perceived their performance during the last two workshops. From all of their feedback, research journal entries, and field notes, I concluded that: (a) teachers were used to receiving instructions from the school board, but they were not requested to participate actively in activities. They had a passive role. (b) There were no signs of accountability as to the implementation of the school board determinations. So, teachers did not have in mind that they would be held accountable for the success or failure of the research. They were not used to being held accountable for the school's low achievement or for the students' bad behavior. Otherwise, they blamed the students and their families for low achievement. (3) Teachers understood commitment as physical presence. Commitment for them did not involve their actions or their responsibility for end results.

Teachers were verbally supportive of the research. They stated that understood the relevance of the topics for their practice and they believed that participating in the research could impact their teaching and learning. They volunteered to participate in the research. However, they did not perceive that they were the ones who would make it happen; they did not perceive that their attitudes could jeopardize the impacts that they expected to produce on their teaching and learning; they did not perceive their behavior as being very similar to the behavior of their students (with the difference that they were very respectful); and they did not perceive any discrepancy between what was expected from their participation in the research and their actual performance.

I realized that I needed to find a way to address the problem and raise their awareness of the performance discrepancy, but I could not tell them that their performance was not satisfactory because that was not their perception, and it could scare them away. During that week, I revisited the literature on the constructs that oriented the research and concluded that:

(1) Individuals who make external attributions for failure do not have the capacity to perceive the connection between their actions and the production of outcomes (Abramson et al., 1978; Sahoo, 2002); therefore, these teachers did not perceive that it was their actions during the implementation of the intervention that would make the difference that they were expecting to see after the workshops.
(2) Individuals who make external attributions for failure do not take personal responsibility for results (Seligman, 2006), they attribute outcomes to external forces, such as luck or the natural dynamics of the environment; therefore, these teachers might be expecting that the

effectiveness of the intervention would automatically materialize at the end of the workshops, just because they attended them.

(3) In the course of that week, a respected national newspaper published an article about data collected by the National Institute of Educational Research (INEP, 2012) about teachers' perceptions of low achievement in schools. The results published in the newspaper showed that 86% of teachers in Rio and Recife blamed the students and their parents for low achievement. This indicated that the teachers at that school would need strong factual evidence that the student was not the only one to blame for low achievement – the tendency of blaming students was very widespread.

(4) The teachers with that level of crystalized unrealistic beliefs could benefit from a metacognitive reality testing – a procedure frequently used in metacognitive therapy to help individuals view the reality as it is, not as they imagine it is (Seligman, 2006; Wells, 2008). The process includes fact-based reflection, confrontation of automatic irrational thoughts, the disputation of such thoughts, and the conscious development of a new causal explanatory style. The sequence of reflections involved in reality testing lead individuals to make realistic conclusions without being told by others what the reality truly is. This way, individuals do not feel offended by others pointing out their performance deficits; they are capable of identifying the gap and seeking solutions by themselves. This has the potential to empower them to take control: an essential condition for the alleviation of learned helplessness.

Rationale for change:

The researcher created a metacognitive reality testing framework with the objective of helping teachers perceive the connection between their actions and the production of the research results which could bring about the impact that they were expecting from the research process.

The objective of the reality testing experience was to lead teachers to perceive: that commitment involved taking ownership of the process and producing results; that they were the ones who would produce the impacts they were expecting from the workshops; that they needed to produce research data in due time; that they needed to implement the intervention in their classrooms in a reflective way; and they were co-responsible for the end results. Ultimately, they needed to perceive that the success or failure of the research depended on their participation as agents of transformation.

How change contributed to the attainment of the research goal:

The implementation of the reality testing experience was risky for two reasons: first, it consumed the time of two workshops. Second, some teachers who could perceive the performance discrepancy, even after the reality testing experience, could feel embarrassed and quit the research. Fortunately, that did not occur and the implementation of the reality testing framework was successful. Teachers' performance was more positive after the reality testing experience. They participated actively and spontaneously, they started reporting implementation of the theories as well as the perceived results, accomplished the tasks and produced data in due time. The post-tests were delivered to the research team teachers one week prior to the last workshop and at the last workshop 16 questionnaires were returned. However, one teacher dropped out after the reality testing; when asked why he was not coming to the workshops anymore, he said he didn't believe that anything could work with today's students. He admired our hopeful attitudes but he thought he was wasting his time trying to help those students.

Interruption of intervention to address performance deficit

Process of creation of the metacognitive reality testing framework

Identification of performance gap

Participants verbally demonstrated support for the research. They described the research as relevant, necessary, and interesting. They attended the workshops, even on a strike day; however, they did not participate voluntarily, only six questionnaires were returned in due time, and only three teachers returned the student behavior checklists. Some teachers lost their papers and never said anything until I insisted I need the papers back.

Reach out for theoretical background to understand the phenomenon

According to Mager and Pipe (1997), when performance gap is observed, the first thing that needs to be considered is the implications of performance discrepancy to the attainment of the task goal. Some problems can be ignored because they do not affect the final results, while others can hinder results altogether. The discrepancy between the teachers' state of mind and their actual performance in this research could hinder the accomplishment of the research goal. Moreover, one more frustrated initiative at the school could become a self-fulfilling prophecy that nothing worked at that school and it could give ammunition for an increase of participants' helplessness (Abramson et al., 1978). If the research project resulted in failure, this would represent one more objective noncontingency that teachers could attribute to the uncontrollability of the conditions at that particular school.

Orientation for change from the study design

The orientation from the formative and design experiment methodology was that researchers be watchful for contextual conditions or situations that may hinder the attainment of the study's goal. The researcher needs to be proactive and make the necessary adaptations to the implementation plan, based on theoretical reasoning, in a way that the changes implemented compensate for or eliminate threats to the development of the research (Reinking & Bradley, 1988).

Researcher's actions

Based on Mager and Pipe's (1997) performance improvement framework, and informed by the metacognitive reality testing concept (Seligman, 2006; Wells, 2008), the researcher created a metacognitive reality testing framework for closing the performance discrepancy. Mager and Pipe (1997) informed that the prevailing reasons why individuals display underachieving performance are: (a) they do not have what is expected (tools, space, authority); (b) they are punished if they do it right; (c) they are rewarded if they do it wrong; (d) they are ignored if they do it right or wrong. Teachers in this study complained that they did not have appropriate training for teaching that population (Mager & Pipe's item a); however, when they did an outstanding job, nobody recognized their personal efforts (item c & d). The participating teachers believed that they were ignored if they did their jobs well or badly. Policies, orientations, and programs came top down from the School Board. Teachers were not used to reflecting about their practices on a regular basis, and they did not believe that their teaching practices could impact the conditions of the classroom or the school environment. Furthermore, teachers in this school did not take active leadership at the school level. They followed

guidelines that came from the School Board and were passed on to them by the school's coordinator and principal.

Constraints and benefits of the framework

The restrictions of the application of the framework were: (1) time spent on reality testing could diminish discussion time, but teachers did not engage in voluntary discussions anyway; (2) reality testing could impact participants' affective domain. It is not easy for some professionals to have their performance critiqued, especially in front of their peers; (3) participants could perceive a change in the focus of the research and drop out of the research project.

Implementation of the framework

The framework was implemented within the two following weeks (weeks four and five of the implementation of the intervention). All work was anchored in a chart which defined high and low efficacious schools. This chart was part of the initial planning. It was supposed to be used in the third workshop, but its use was postponed to give way to the discussion about performance. So, by using that chart to establish standards of good and bad practices, the shift of the research was smooth. Most teachers did not even realize any change in the focus of the workshop content. They thought that the reality testing experience was part of the original plan. Only the pedagogical coordinator and three other teachers noticed that we had deviated from the theories and moved into self-reflection and self-evaluation. The complete metacognitive reality testing framework can be found in Appendix K.

Outcomes of the implementation of the reality testing framework

The metacognitive reality testing framework was implemented in two workshops. Teachers responded very positively to the reflections based on concrete evidences of performance and teachers' attitudes changed radically after the reality testing exercise: they started to participate actively in the discussions; took ownership of the implementation of the lesson plans; implemented them in their classes; discussed feedback openly; and produced research data as planned. During the week following the reality testing exercise, all of the pre-tests were collected, the student behavior checklists were returned, two teachers reported reading the article about the MUSIC Model of Academic Motivation before the discussion date, and two teachers went online to read more about learned helplessness. On the last day of the research (week 8), 16 participants attended the workshop in spite of a disruptive incident which occurred in some classrooms earlier in the morning. The incident motivated the suspension of several middle school students from different classes. In the course of the two final weeks, all focus team teachers contributed with old lesson plans, created new lesson plans using the new template, taught at least one class using that lesson plan, had at least one class observed, and received feedback. At the last workshop, all participating teachers returned the post-tests and completed the final evaluation survey.

Sequence of implementation of the framework

Table 9

Sequence, content, and activities used during the implementation of the reality testing framework.

March 21st, 2012 - Workshop 4: Self-efficacy (continued) common characteristics of efficacious and inefficacious schools according to the specialized literature.

Reality testing day one:

1. The group used the chart of common characteristics of efficacious schools to establish standards of best practices and compared them to the common characteristics of inefficacious schools to establish a gap between best and worst practices. The chart compared the following items: school principals, school's mission and vision, teachers, students, parents, teacher-parent partnership. The chart can be found in Appendix L.

2. Teachers established a gap between efficacious and inefficacious schools. They created a continuum from one to seven, where one represented the highest efficacy and 7 represented the lowest efficacy.

3. Teachers reflected about the school in which they worked and attributed a grade from one to seven to each item in the chart, finding a place for their school on the continuum they had just created. The teachers attributed high grades to their school with regard to all the elements in the chart, except for parents and students whom they considered very low achieving.

4. Based on the standards of best practices they saw in the chart, the researcher asked teachers to attribute a grade to their participation in the research process so far. Participants attributed positive grades to themselves.

5. The researcher projected a slide that contained all of the research related requirements that teachers had accomplished so far (attendance and verbal support to the research) and the requirements that the teachers had failed to accomplish (all missed deadlines and lack of active participation).

6. The researcher invited teachers to reflect about the lists of positive and negative performance on the slide and revisit their self-evaluations. Teachers looked at the evidences of inefficacious performance and started to reflect upon their own performance.

7. After reflecting and discussing in pairs, teachers started to change the grades they had attributed to themselves with regard to their active participation in the research and they decided to revisit the grades they had attributed to the school elements in the chart, as well. After reflection, teachers realized that their assessments were biased.

8. Teachers revisited their assessment of their school and concluded that students and

parents were, indeed, the main causes of low achievement; however, the school practices and teaching methods were also failing the students and their parents.

9. The grades went to a more realistic level and the list of causes of low achievements changed dramatically. Before this reality testing experience, teachers had only *one* causal explanation for low achievements: the student demographics. After the reality testing exercise, they had a new list of causality: (1) students' behaviors, (2) lack of parental involvement, (3) students' lack of perception of the relevance of education, (4) lack of policies/strategies/concerns towards discipline and parental involvement from the school part, and (5) inadequate teaching methods for that context.

	Grades before reflection	Grades after reflection
Validation of the list as appropriate external standard for bad and worst practices	All participants agreed with the list	Unchanged
Grade attributed to their school in the continuum from 1 to 7, 1 being best and 7 being worst practices.	5	7
Relevance of establishing standards to orient practices (using the same scale)	1	1
Group's general commitment (using the same scale)	2.5	4

10. After identifying new possible causes of low achievements, teachers worked on a list of actions they could take to improve the school's environment as well as the teaching and learning process. The researcher suggested drafting an action research plan to address the issues they had identified.

11. Two groups of teachers had an extra meeting with the researcher during the following week to draft a plan to address the issues discussed. The draft of the action research plan can be found in Appendix M. Teachers also discussed the possibility of conducting the action research after the current research. The school administrators stated that they would give support to any initiative led by the teachers to improve the school's environment and achievement.

How change contributed to the attainment of the research goal:

- Teachers identified the discrepancy between expected and actual performance.
- They become cognizant that they were active participants in the transformation process.
- They considered the possibility of implementing an action research in the second semester to address the school issues. This indicated that they could perceive that their actions could produce the desired outcomes. They projected success and not failure for the future.

March 28th, 2012 - Workshop 5: Reality testing day two: Reflection on Commitment: Teachers discussed the elements involved in the concept of commitment which the school needed to develop: ownership, action, and responsibility with results. The group contributed to a concept map with all the elements in a cause-consequence relationship.

- **How change contributed to the attainment of the research goal:**
- Teachers stopped blaming students alone for low achievements and were more interested in creating the lesson plan to operationalize the theories to improve teaching and learning.
- Teachers changed their attitudes towards the research process, becoming more active participants.
- Two teachers reported successful stories of the application of the self-efficacy strategies in their classrooms.
- Two teachers read the article on MUSIC Model of motivation before due date.
- Two teachers went online to learn more about learned helplessness.
- Two teachers said that knowing the theories had helped them understand the helplessness dynamics and address it in their class.

Implementation of the intervention resumes.

At this point, the research work resumed as previously planned. However, some changes to the initial implementation plan were needed due to the time allocated for the reality testing experience. Workshop 6 addressed the theory and practice of metacognition; workshop 7 was devoted to the MUSIC Model of Academic Motivation and the development of the lesson plan; and workshop 8 was used for closing the research and conducting the final evaluation of the research process. In the course of the sixth week, the teachers contributed old lesson plans to be compared with the new ones planned according to the new lesson plan template. In the course of the seventh week, teachers read the article about the MUSIC model of motivation and chose the topic of the lesson they wanted to create using the new lesson plan template. One teacher decided to teach students about the importance of attention and memory for learning, the others decided to use the lesson plan to teach the subjects that they would be teaching anyway. In the course of the eighth week, participants completed the post-tests and returned them on the last workshop.

Table 10

Developments of the last three workshops.

April 4th, 2012 - Workshop 6: Metacognition knowledge (helps accuracy of attributions as it focuses on fact-based reflections) and regulation (helps self-efficacy as students learn to plan, monitor, and evaluate their thoughts during tasks).

Initial plan: From March 28th to April 11th	**Actually accomplished:**
1. Metacognitive practice 2. Design of lesson plan 3. Implementation of lesson plans in the classroom 4. Class observations and feedback	1. Cognitive information processing (analogy computer = human brain) 2. Trajectory of information from the moment it reaches the senses until storage in the permanent memory (metacognitive knowledge) 3. How the teacher, through his/her pedagogical practices, could imitate and reinforce the effectiveness of the processes that occur during that trajectory 4. Metacognition regulation (to make sure the information trajectory is efficient all through the process) 5. Discussion of Gagné's nine events of instruction and the MUSIC Model of Academic Motivation and metacognitive regulation strategies) could improve the teaching and the learning experience

Metacognitive intervention for the alleviation of learned helplessness

Reasons for change:

The workshop was conducted as planned. Just the distribution of content was different from the initial plan.

Rationale for change:

For the sake of time, following the Guided Experiential Learning orientations as suggested by Clark et al. (2012), the method was straight forward and the researcher led participants to make immediate connections between the theories discussed previously and the content presented in this workshop. This content was important for the following week when teachers would have the hands-on experience of creating the lesson plans.

Consequences of the change:

We covered all the theoretical content necessary for the creation of the lesson plan. We had a famous professor attending the workshop. He was impressed and expressed his delight with the level of the work that was being done. The teachers' morale was very high. All teachers shook hands with the researcher and thanked her for conducting the research at their school.

How change contributed to the attainment of the research goal:

We managed to cover all the content within the timeframe we had initially established. The baseline knowledge for the operationalization of the theories was successfully accomplished and the attainment of the research goal was protected.

April 11th, 2012 - Workshop 7: Creation of the lesson plan

Initial plan: From March 28th to April 11:	**Actually accomplished:**
5. Metacognitive practice 6. Design of lesson plan (Appendix N) 7. Implementation of lesson plans in the classroom 8. Class observations and feedback	1. Discussion of the elements of the lesson plan framework; content that each teacher would like to address; and scheduling of observations

Reasons for change: No changes were needed

April 18th, 2012 - Workshop 8: Final evaluation of the research

Initial plan:	**Actually accomplished:**
1. Evaluate research process 2. Complete final evaluation survey 3. Collect post-tests	1. Participants discussed the research process and completed a survey based on guidelines by Lyndon and King's (2008) framework for evaluation of the effectiveness of collaborative professional development workshops. 2. Participants completed the post-tests during the course of the week prior to the workshop and returned them on that day.

Reasons for change: The post-tests were completed at home due to the fact that the pre-tests were also completed at home.

Conclusions

As presupposed by the methodology, the implementation plan was adjusted to the conditions of the environment; changes implemented were informed by the methodology guidelines, anchored in the theories that oriented the research processes, and contributed to the attainment of the research goals. The implementation of changes did not affect the research time line, scope, or quality initially planned for. Qualitative and quantitative data produced during this phase are presented in chapter five and discussed in Chapter six.

Chapter 5: Presentation of Data

This chapter represents the conclusion of formative and design experiment phase five, post implementation assessment. It contains the presentation of the data collected during the implementation of the intervention, the triangulation between quantitative and qualitative data, as well as evidences of the internal validity of the study. Data collection and analysis in formative and design experiments focus on how the study develops towards the attainment of the research goal. The main elements taken into account during data analysis included: (a) the factors that enhanced or hindered the attainment of the goal; (b) the adaptive adjustments mandated by the context to ensure the success of the intervention; (c) the consequences of decision-making upon the attainment of the goal; and (d) signs of transformation that may be attributed to the intervention (Reinking & Bradley, 2008). The validity of a formative and design experiment is determined by the consistency of the decision-making process, as well as the consequences of any changes to the achievement of the goal. As this study relies on quantitative and qualitative data, the triangulation of both contributed to establish the validity of the study. The data collection was oriented by four questions, as follows.

Primary Question

How does participation in collaborative professional development workshops on learned helplessness, self-efficacy, and metacognition impact teachers' perceived efficacy with regard to their capacity to address students' helplessness?

Secondary Questions

a. What are teachers' beliefs about their own capacity to mitigate learned helplessness before and after the workshops?

b. What are participating teachers' perceptions of the impact of implementing a lesson plan that includes Gagné's Nine Events of Instruction, the MUSIC Model of Motivation, and metacognitive strategies?

c. From the beginning to the end of the implementation of the study, will there be a pre/post-test difference in teachers' (a) learned helplessness, (b) self-efficacy, and (c) metacognition?

Quantitative Data

The quantitative data were derived from three data sources: a) pre- and post-tests on participants' levels of learned helplessness, self-efficacy, and metacognition; (b) a survey depicting participants' perspectives on the feasibility of using the lesson plan designed to operationalize the theories; and (c) a survey with participants' final evaluation of the intervention.

Pre- and post-test results

The pre- and post-tests were completed by 16 participants. SPSS 14.0 was the statistical tool used to run paired *t*-tests to investigate participants' status prior and after the intervention. The confidence level established for all tests was $\alpha = 0.05$. An effect size was calculated for each

test. Cohen's *d* was the method chosen to calculate effect size as it is widely used in behavioral science studies (Cohen, 1988).

The instrument used for the assessment of learned helplessness depicted the individual's attributions for positive and negative events. First, the individual's positive and negative attributions were calculated separately. Then, the negative scores were deducted from the positive ones. The results generated the helplessness indicator, which ranged from -18 (helpless) to +18 (optimist). For the sake of this study, table 11 was created to provide a visual tool for the learned helplessness continuum.

Table 11

Learned helplessness continuum from pessimist to optimist.

Very helpless	Helpless	Fairly helpless	At risk	Fairly optimist	Optimist	Very optimist
-18 to -12	-12 to -6	-6 to -3	-3 to 3	3 to 6	6 to 12	12 to 18

The instrument used to assess teachers' instructional efficacy was designed to depict two types of teacher efficacy as independent variables: personal teaching efficacy (PTE) and general teaching efficacy (GTE). The results for PTE and GTE were calculated separately. The instrument used to assess metacognition included metacognitive knowledge and abilities but results were calculated together as general cognitive abilities. The metacognition instrument was designed in such a way that the highest score was 18 and the lowest score was 108. The results are as follows.

Table 12

Pre- and post-test results table.

		Instructional Efficacy						
	Range of possible values	Pre-test M (SD)	Post-test M(SD	Mean difference	*t*	*df*	*p*	*d*
Learned helplessness	-18 to +18	2.63 (2.04)	4.50 (0.67)	1.86	4.83	15	0.001	1.23
PTE	Min 5 Max 30	17.43 (4.77)	20.43 (4.68)	3.00	3.19	15	0.003	.63
GTE		10.06 (3.64)	12.68 (5.28)	2.62	2.38	15	0.015	.58
Meta-cognition	Min108 Max 18	37.00 (10.34)	32.56 (9.75)	- 4.43	-5.98	15	0.001	.44

The findings indicate that all of the tests showed statistically significant difference; however the practical significance level varied. Table 13 contains the Cohen's *d* "rule of thumb" categories, critical values for N = 16, and the effect size found for each construct investigated in this study.

Table 13

Summary of Cohen's d values.

Cohen's d						
Practical significance	Effect size	Critical value for N=16	Effect size found in this study (N=16)			
			Learned helplessness	PTE	GTE	Metacognition
Small	.20	.11				.44
Moderate	.50	.46		.63	.58	
Large	.80	.84	1.23			

Assessment of participants' perspectives on the feasibility of the lesson plan

After attending the four collaborative professional development workshops, the teachers created a lesson plan that operationalized the theories into practice. The lesson plan included the

following components: (a) the elements of the MUSIC Model of Academic Motivation (Jones, 2009) which aimed to empower the students, to raise interest, and to provide opportunities for success; (b) the Nine Events of Instruction (Gagné et al., 2005) which helped teachers make sure they respect and foster the mental processes which happen in each memory during learning, as informed by the cognitive information processing theory; and (3) the metacognitive planning, monitoring, and evaluation phases before, during, and after each activity in the lesson plan as suggested by Schraw (1998). These three components were included in the lesson plan because: all of them derive from the same theory, the cognitive information processing theory; all of them provide practical tools for student success; and all of them are easily operationalized and feasible to be observed and evaluated through behavior.

The combination of these components was intentionally used for the alleviation of learned helplessness. The assumption was that, with the understanding of the interplay between learned helplessness and self-efficacy intermediated by the metacognitive regulation teachers could implement effective strategies, monitor progress, and evaluate results for that purpose. They could consciously follow the processes that they wanted to impact and observe the results through students' behaviors. The lesson plan provided a systematic and consistent way of imitating the natural flow of the information through the mind of the student. The components of the Events of Instruction, strengthened by the MUSIC Model of Academic Motivation, provided a guided and structured sequence which facilitated students' perception of progress. With such structured guidance students could perceive the process and expect success. However, as these teachers had demonstrated resistance to implement interventions suggested by the school board before, they were asked to complete a survey indicating their acceptance of the lesson plan, the feasibility of its application, their beliefs about the effectiveness of the lesson plan, and their

intentions to actually use it. The objective of the survey was to validate the lesson plan and have a physical document demonstrating both their approval and commitment to use it. All sixteen participants completed the survey:

Table 14

Evaluation of the lesson plan containing the Nine Events of Instruction (Gagné, 2005), metacognition (Schraw, 1998), and the MUSIC Model of Motivation (Jones, 2009) was done after the creation of the lesson plans by the focus team participants:

Circle the number appropriate number next to each statement below to indicate how much you agree or disagree with each one. Use the following label to guide your choices:
(1) I totally agree; **(2)** I agree partially; **(3)** I agree more than I disagree
(4) I disagree more than I agree; **(5)** I partially disagree; **(6)** I totally disagree

Question	**Options**	**Frequency**	**Percentage**	**Percentage of agreement**
1. I believe the use of this lesson plan is feasible	**(1)**	**10**	**63%**	**94%**
	(2)	**4**	**25%**	
	(3)	**1**	**6%**	
	(4)	1	6%	
	(5)	0	0%	
	(6)	0	0%	
2. I believe that the metacognitive elements included in this lesson plan can help students learn better	**(1)**	**13**	**81%**	**93.5%**
	(2)	**1**	**6.25%**	
	(3)	**1**	**6.25%**	
	(4)	1	6.25%	
	(5)	0	0%	
	(6)	0	0%	
3. I believe that the use of this lesson plan can help foster a unified pedagogical practice in this school	**(1)**	**5**	**31%**	**87%**
	(2)	**8**	**50%**	
	(3)	**1**	**6%**	
	(4)	2	13%	
	(5)	0	0%	
	(6)	0	0%	
4. I believe that if I use this lesson plan my students will learn better	**(1)**	**8**	**50%**	**94%**
	(2)	**6**	**38%**	
	(3)	**1**	**6%**	
	(4)	1	6%	
	(5)	0	0%	
	(6)	0	0%	
5. I believe that if my colleagues use this lesson plan at the same time as I do, we	**(1)**	**10**	**63%**	**100%**
	(2)	**5**	**31%**	

will be able to improve this school's achievement	**(3)**	**1**	**6%**	
	(4)	0	0%	
	(5)	0	0%	
	(6)	0	0%	
6. I believe all teachers in this school are capable of using this lesson plan to improve the students' learning outcomes	**(1)**	**8**	**50%**	**75%**
	(2)	**3**	**19%**	
	(3)	**1**	**6%**	
	(4)	3	19%	
	(5)	1	6%	
	(6)	0	0%	
7. I am going to try this lesson plan	**(1)**	**13**	**81%**	**100%**
	(2)	**3**	**19%**	
	(3)	**0**	**0%**	
	(4)	0	0%	
	(5)	0	0%	
	(6)	0	0%	

Results of the survey indicate that the vast majority of teachers strongly believed that the lesson plan was a feasible tool to operationalize the theories. They believed that the lesson plan could improve teaching and learning. All of the teachers indicated that they intended to experiment with the lesson plan and that if the other teachers used the lesson plan at the same time as they did, together, they could improve the school's achievement. However, the items that depicted teachers' collective efficacy received the lowest scores: First, 13% of the teachers did not believe that the lesson plan could unify the pedagogical practices at that school. Second, 25% of the teachers did not believe that all teachers at that school would be able to use the lesson plan to increase learning outcomes. Despite believing that the tool was effective, 25% of the teachers did not believe the lesson plan would be implemented by their colleagues.

Participants' final evaluation of the workshops

The final evaluation of the workshops was conducted at the end of the last workshop. All sixteen participants completed it. The survey was done in accordance with the guidelines set by Lyndon and King (2009). The guidelines suggested that the evaluation should include five

categories: participants' reactions; participants' learning; organizational support to change; participants' use of new knowledge and skills; and impact on students. The survey below contemplates four of the five categories. Guskey (2000) alerts that impact on students must be approached with caution because, most of the times, collaborative professional development workshops do not generate observable impact on students right away. Therefore, it is common for this item to be assessed in a different form or on a different occasion (Lyndon & King, 2009). In this study, the impact on the students was addressed in the final interview with focus team participants. Teachers expressed their perceptions of possible impact of their participation in the workshops on their students.

In this survey, teachers demonstrated high indices of satisfaction and approval of the research process. A hundred percent of the teachers agreed, to some extent with most items in the survey. Only three out of 25 items were scored below 80%. How to foster a positive dynamic in the classroom represented 78%; intentions to continue using the knowledge and skills we discussed in the workshops in their instruction in this particular school represented 74%; and participant's engagement represented 71%. All three items which received the lowest scores were related to the teachers' perceptions of that particular environment, because 100% of the participants declared that they had learned the theories, they were already using them in their practices and they intended to use the knowledge and skills developed during the workshops in another place. This confirms the teachers' low outcome expectancies in relation to this particular school.

Table 15

Participants' evaluation of the research process - percentage of participants' agreement with the statements.

Participants' reactions

(1) I totally agree; **(2)** I agree partially; **(3)** I agree more than I disagree;
(4) I disagree more than I agree; **(5)** I partially disagree; **(6)** I totally disagree

	Options	**Frequency**	**Percentage**	**Percentage of agreement**
1. The content was relevant	**(1)**	16	100%	100%
	(2) to (6)	none	0%	
2. The amount of content was appropriate	**(1)**	8	50%	93.75%
	(2)	5	32.25%	
	(3)	2	12.50%	
	(4)	1	6.25%	
	(5) & (6)	none		
3. The presentations were clear	**(1)**	15	93.75%	100%
	(2)	1	6.25%	
	(3) to (6)	none		
4. I was actively engaged in the workshops	(1)	3	18.75%	71.25%
	(2)	8	50%	
	(3)	2	12.5%	
	(4)	2	12.5%	
	(5)	1	6.25%	
	(6)	none	none	

Participants' learning
As a result of the professional development workshops, I have learned:

5. What learned helplessness is	**(1)**	13	81.25%	100%
	(2)	3	18.75%	
	(3) to (6)	none	none	100%
6. What the learned helplessness signs in the classroom can be like	**(1)**	12	75%	
	(2)	4	25%	
	(3) to (6)	none	none	
7. The implications of student helplessness for learning	**(1)**	12	75%	100%
	(2)	4	25%	

8. How learned helplessness can be addressed in the classroom	**(1)**	13	81.25%	100%
	(2)	3	18.75%	
	(3) to (6)	none	none	
9. What self-efficacy is	**(1)**	12	75%	100%
	(2)	4	25%	
	(3) to (6)	none	none	
10. How self-efficacy can be enhanced	**(1)**	12	75%	100%
	(2)	3	18.75%	
	(3)	1	6.25%	
	(4) to (6)	none	none	
11. The sources of information people use to develop their sense of efficacy	**(1)**	11	88.75%	100%
	(2)	5	31.25%	
	(3) to (6)	none	none	
12. The implications of high self-efficacy for learning	**(1)**	11	88.75%	100%
	(2)	5	31.25%	
	(3) to (6)	none	none	
13. What metacognition is	**(1)**	9	56.25%	100%
	(2)	4	31.25%	
	(3)	3	12.5%	
	(4) to (6)	none	none	
14. What the main components of metacognition are	**(1)**	9	56.25%	100%
	(2)	5	31.25%	
	(3)	2	12.5%	
	(4) to (6)	(4) to (6)	(4) to (6)	
15. How I can use metacognitive planning, monitoring and control in the classroom	**(1)**	8	50%	100%
	(2)	6	37.5%	
	(3)	2	12.5%	
	(4) to (6)	none	none	
16. How to include metacognition in my lesson plans	**(1)**	9	56.25%	100%
	(2)	5	31.25%	
	(3)	2	12.5%	
	(4) to (6)	none	none	
17. How to check the frequency of helpless behaviors the students are displaying	**(1)**	9	56.25%	100%
	(2)	5	31.25%	
	(3)	2	12.5%	
	(4) to(6)	none	none	
18. How to better foster positive classroom dynamics	**(1)**	7	43.75%	78%
	(2)	5	31.25%	
	(3)	none	none	
	(4)	1	6.25%	
	(5)	3	18.75%	
	(6)	none	none	
19. How to better help students learn	**(1)**	7	43.75%	87.5%
	(2)	7	43.75%	
	(3)	none	none	

	(4)	1	6.25%	
	(5)	1	6.25%	
	(6)	none	none	
Organizational support and change				
20. The school administration will support us if we want to continue using metacognitive strategies in our classroom	**(1)**	10	62.5%	100%
	(2)	6	37.5%	
	(3) to (6)	none		
21. The school administrators will support us, if we decide to continue studying these topics	**(1)**	9	56.25%	100%
	(2)	7	43.75%	
	(3) to (6)	none	none	
22. The school administration is aware of the relevance of what we have been doing in these workshops	**(1)**	9	56.25%	100%
	(2)	6	37.5%	
	(3)	1	6.25%	
	(4) to (6)	none	none	
Participants' use of new knowledge and skills				
23. I have used most of what I learned in the workshops in my instruction	**(1)**	5	31.25%	100%
	(2)	10	62.5%	
	(3)	1	6.25%	
	(4) to (6)	none	none	
24. I intend to continue using the knowledge and skills we discussed in the workshops in my future instruction in this school	**(1)**	9	56.25%	74.75%
	(2)	2	12.5%	
	(3)	1	6.25%	
	(4)	4	25%	
	(5) & (6)	none	none	
25. I intend to use the knowledge and skills we discussed in the workshops in another place	**(1)**	14	87.5%	100%
	(2)	1	6.25%	
	(3)	1	6.25%	
	(4) to (6)	none	none	

Qualitative Data

The qualitative data presented in this chapter is derived from initial and final individual interviews with the research team participants. Observational data registered in field notes were used in rare occasions to clarify statements made by the participants during interviews. For the

sake of avoiding unnecessary repetition in this chapter, the observational data was included in Appendix O. Each interview lasted approximately 25 minutes each, was scheduled beforehand, and occurred in the school facility. All interviews were recorded on the same electronic voice recorder and transferred to the researcher's lap-top.

The researcher informed the teachers she would ask a few questions related to the research but participants were free to talk about any other subject they thought relevant at that moment. As teachers answered the first questions, if they addressed the topics in the interview protocols, the researcher did not interfere. The researcher decided to probe as little as possible in order to avoid influencing the participant's answers. The researcher was working very closely with the participants during the workshops and probing could prompt the participants to try to please the researcher by giving answer that he/she thought the researcher was expecting to receive.

Language constraints.

All interviews were recorded in Portuguese and transcribed into English by the researcher. The researcher is a qualified English <> Portuguese translator and interpreter. She has an independent studies certificate on translation and interpreting from Brasillis Institute in Rio de Janeiro, a Court Interpreting certificate from the Tennessee Foreign Languages Institute, in Nashvile, TN, and is a member of the American Translators' Association with registration number ATA245238. The researcher is a native speaker of Portuguese, completed her undergraduate course in Brazil, and earned a Masters' degree in an American University. Therefore, it was the researcher's and academic advisor's judgment that the researcher was qualified to work with the data in both languages. The recurring themes and categories identified

were translated into Portuguese and submitted to the research team participants for member checking.

Methodology used for the collection and analysis of research data.

The methodology that oriented this study, FADE, allowed the researcher to make use of quantitative and qualitative data collection and analysis. The objective of the qualitative portion of this study was to gain insights that could not be inferred from the quantitative data and allow triangulation for better understanding of the research data. Quantitative data assessed all participants' status related to learned helplessness, instructional efficacy, and metacognition before and after the intervention by means of psychometric tests. Initial interviews were used to gain insights on the following aspects related to the research team participants:

- Participants' expectations for their participation in the research;
- Perceived initial status with regard to the constructs of learned helplessness, self-efficacy, and metacognition;
- How participants perceived their capacity to address students' helplessness;
- How participants felt about the implementation of new strategies in their classes;
- Dispositions with regards to their participation in the research - how their data could provide insights on the interpretation of the quantitative results.

Final interviews with the same participants provided insights on the following:

- Participants' reactions about their participation in the research;

- Participants' perception with regard to any impact of their participation in the research;
- Participants' reactions with regard the application of the lesson plan template that operationalized the theories;
- Participants' intentions to continue using the knowledge and tools developed during the research;
- Perceptions on the application of the lesson plan;
- Free comments.

Data organization and analysis

Corbin and Strauss (1998) state that qualitative research is both art and science: the art of analysis consists of the "creative use of procedures to solve analytic problems and the ability to construct a coherent and explanatory story from data, a story that 'feels right' to the researcher (p. 47)."; the science consists of the application of a systematic process to analyze the data. As previously stated, the research team consisted of eight teachers and the pedagogical coordinator. The pedagogical coordinator has been in this position for the last 12 years but before that she was an elementary school teacher and principal in the same school. Her role is to oversee the schools' pedagogical practices, provide training (when the school board policies allow), and mediate the relations between the teachers and students, students' parents, school administration, and school board. The pedagogical coordinator participated in all of the workshops in this study. So, despite trusting her instincts and using a systematic method to complete a research diary and field notes, the researcher relied on the vast experience and knowledge of the pedagogical coordinator to clarify, confirm, or disconfirm interpretations before completing diary entries and field notes to

make sure the data was validated by someone else other than the researcher as recommended by Corbin and Strauss (1998) who state that validation refers to "a checking out of interpretations with participants and against data as the research moves along (p. 48)." The researcher knew that after she left the research site and came back to the United States, it would be difficult to get in touch with the participants who did not check the internet on a regular basis.

At the beginning, the researcher was concerned about the participation of the pedagogical coordinator in the workshops because as a figure of authority, maybe her presence could intimidate the participants. However, when the researcher checked with some participants they stated that they thought that the participation of the pedagogical coordinator was positive because it demonstrated that the school administration valued the research and it could have a continuation after the researcher left the site. A middle school teacher said:

> I think that the fact that a representative of the school administration (referring to the pedagogical coordinator) participated in this research was an important factor, because as a leader of the group, it was important for her to participate, not only be conscious about what was happening among to the group, but also to lead new applications of these techniques in the future.

A step-by-step procedure for the organization and analysis of the data was used as recommended by O'Connor and Gibson (2003):

Step 1. Before working with the data, the researcher revisited the purpose of the study and research questions;

Step 2. The researcher listened to all initial and final interviews three times to get acquainted with the data and make sure she understood what the participants were saying;

Step 3. The researcher wrote a few topics (not more than three) which were most evident and seemed to be common in the initial and final interview:

a. Initial interview:

- All participants wanted to learn something;
- All participants mentioned that the research topics interested them;
- All participants complained about the students' behaviors;

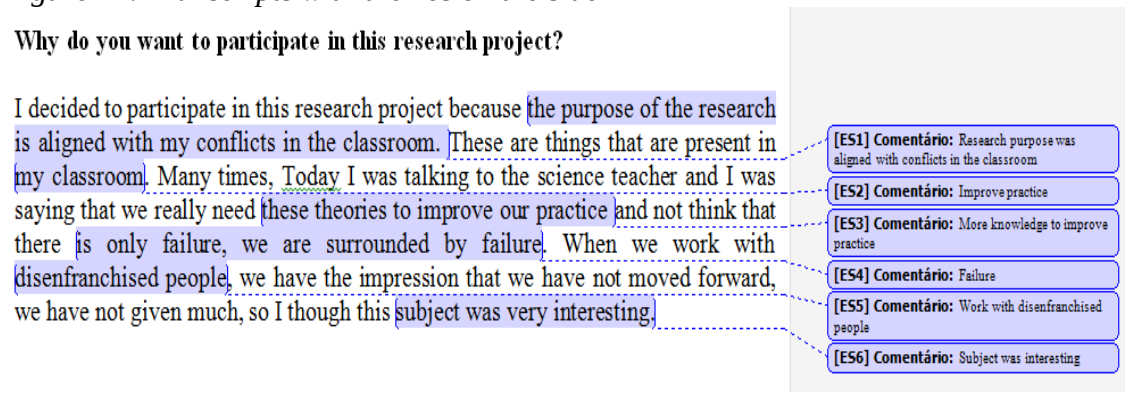
b. Final interview:

- Complaints about students' behaviors diminished significantly;
- All participants mentioned the importance of reflections.

The word complicated was used 19 times in the initial interview to refer to the students, the students' families or the school environment. The same word was not used at all in the final interview.

Step 4. The same procedure was followed for initial and final interviews. The researcher only started manipulating the final interview data after completing the work with the initial interviews. For every sentence in each interview a theme was identified. The researcher used the "track changes tool" of the word processing to write each theme on the right side of each sentence transcribed as said by the participants as shown in figure 11.

Figure 11. Transcripts with themes on the side



Step 5. Themes generated from each research question were placed into a spreadsheet where the researcher could visualize the common themes across participants. These themes represented participants' individual perspectives as shown in figure 12.

Figure 12. Participants' individual themes

Initial Interview: Themes

Question 1: Why do you want to participate in this research project?

Participant: Joelma	Participant: Adriana	Participant: Jozi	Participant: Fabiana	Participant: Arthur	Participant: Selene
1. Research purpose was aligned with her needs and/or interests. 2. Solutions for problems in the classroom. 3. More knowledge to improve practice. 4. They experience a lot of failure 5. Work with disenfranchised children. 6. Perception of uselessness of their work	1. Learn new things t can be used in the classroom 2. To help students learn better	1. The purpose of the research was very interesting 2. Opportunity to learn new things 3. Always learning, lifelong learning. Teacher is never completely ready. 4. Realities of life change, what was valid yesterday will not be the same tomorrow.	1. To learn new things. To learn theories that can be put into practice - to build the gap between theory and practice. 2. to complement her teacher education to be able to improve her practice.	1. Liked the purpose of the project 2. To learn things that can help practice. 3. To improve practice due to students' discipline problems. 4. To have more resources to make his classes function	1. To have more resou make his classes functi 2. The topics were new aligned with her needs interests. 3. To understand learn helplessness. She thoug studnets and herself ha syndrome. 4. Need to increase stu interest. 5. Need to address stu disruptive behavior

Step 6. The recurring themes were clustered into larger categories which represented the participants' shared perspectives. This new spreadsheet contained 19 categories, the questions that generated the responses represented in each category, the cell of the spreadsheet that contained the original themes by participants, and a direct quote that was likely to represent such category as shown in figure 13.

Figure 13. Categories containing all participants' themes

Categories for initial interview

A	B	C	D	E	
Purpose shared by more than oone participant: Develop new knowledge and strategies to improve practice. Their main purpose was to get the students to behave better so they can teach better.					
Need to develop new knowledge and new strategies	**Need to continue developing or complement teacher education**	**Desire to improve teaching and learning in the classroom practice perspective**	**Need to address studnet' disruptive behaviors**	**Allignment of research purpose and their interests and/or needs.**	**Belief in the pr learned helple school**
Question 1: A6; B1; C2,3,4; D1,2; E2,3, 4; F1,3; G2; H1,2; I1. **Question 2:** A1;C1; E1; G3;	**Question 1**: C3,4; D2; E4; H2 **Question 6**: D2; C1,2,3.	**Question 1**: A3; B1,2; E3,4; F1,4; G2, H3 **Question 2**: B1; D3; G1; H1.	**Question 1**: A2; E3,4; F4,5; G2; **Question 2**: B2,3; D1,2,3,4,5; G2. **Question 6**: B1; G1-8	**Question 1**: A1; C1; E1; F2; G1, I1 **Question 2**:	A4,5,6; F3; I3
Quote 1 Question 1: "Because I thought the purpose was very interesting and also to learn . We are always learning. I wanted an opportunity to learn, to be close to the new things. Because there	**Quote 1 question 2:** "I wanted to learn because I am a pedagogue, but it is distant, what we learn in college is far from the reality of the classroom practice…We	**Quote 1 question 1:** "I thought it would be interesting for me to learn, to have more resources , more information to improve my practice specially in this school because in the other schools	**Quote 1 Question 1** "Today I am the one who has learned helplessness syndrome . Today, I feel almost useless. I think I speak to nobody. At the school and out of school, I	**Quote 1 question 1**: "I decided to participate in this research project because the purpose of the research is aligned with my conflicts in the classroom (Joelma)" **Quote 2:** "I	**Quote 1 questi** need these the our practice ar there is only fa surrounded by we work with d

education; (b) Need to develop new knowledge and new strategies; (c) Desire to improve teaching and learning in the classroom practice; (d) Need to address students' disruptive behaviors; (e) Alignment of research purpose and their interests and/or needs; (f) Belief in the

presence of learned helplessness in the school; (g) Difficulty to teach in that particular school; (h) Lack of parental involvement and help with the students' education; (i) Lack of perceptions of utility of education; (j) Familiarity with the constructs: Learned helplessness, Self-efficacy, Metacognition; (k) Need for effective professional development that can be useful to improve practice; (l) Professional development previously offered was too theoretical; (m) Capacity to teach even difficult students; (n) Teachers can teach any student BUT…; (o). Openness to new strategies; (p) Beliefs that classroom practice can help students overcome the adversity of the environment; (q) Students in this school are different; (r) Teachers' helplessness in face of the school discipline problems; and (s) Schools of Tomorrow.

Step 7. The initial 19 categories were compared. Categories containing the same subject were merged.

Figure 14. Common categories were merged

Familiarity with the constructs: Learned helplessness, Self-efficacy, Metacognition.	Need for effective profesisonal development that can be useful to improve practice	Proferssional development offered does not help improve practice.	Capacity to teach even difficult students	Teachrs can teach any student BUT	Openness to new strategies	Belief that classroom practice can help studnets overcome the adversity of the environment.	Students in are differer

The final spectrum of categories derived from initial interviews with research team participants was: (a) Teachers' expectations for their participation in the research project; (b) Need to develop new knowledge and skills; (c) Teachers believed it was impossible to teach in this school; (d) Teachers blamed students for their impossibility to bring about learning; and (e) Teachers blamed families and environment for students' behaviors.

Step 8. Analysis of the final categories.

Teachers' expectations for their participation in the research project.

The data coded for this category includes: (a) teachers' expectations for their participation in the research project; (b) their perceptions of the alignment of the research goals with their needs, participants' prior knowledge about learned helplessness, self-efficacy, and metacognition; and (c) their beliefs about the presence of learned helplessness in the school.

None of the participants had been told about learned helplessness or self-efficacy before this research. Some of them had read about metacognition but never used it in their classrooms. Teachers understood the theories very quickly. They believed the theories made sense to them because they were experienced teachers and, even though they did not know the theories, they could associate what they were learning with their classroom experiences:

> I did not know anything about learned helplessness - it makes a lot of sense because, as I said before, when you work with very disadvantaged people, you see a lot of failure. Self-efficacy is also new for me but I am a very positive person and I believe I already worked with the students' self-efficacy - even though I did not know the theory - I even worked with the parents … I tried to reach out for the parents - sometimes the mother was the worst mother on earth but I told her she was wonderful. I tried to improve the self-esteem of the person responsible for the child as much as the child's. I always tell my students that they can be governors, mayors, attorneys, a doctors … As to metacognition, I knew the word cognition but not the '*meta*' part (Joelma).

All of the participants declared that they wanted to participate in the research because they expected to learn from it: "Honestly, I want to learn; I want to grasp everything that you say you have come here to learn from us. I want to grab everything that you have to teach us. I think this research will increase my knowledge" (Fabiana). Even a teacher who was about to retire said that she wanted to participate in the research "to learn new things that could be used in the classroom, to help students learn better" (Adriana).

When they first heard the term "learned helplessness," they immediately started comparing what they were they were learning to the behaviors which they had observed in the

school on a regular basis. The theory of learned helplessness truly resonated with what they were learning. So, they believed that participating in the research would help them understand the students better and, possibly, help them develop strategies that could be useful in their classrooms. They believed that the research goals were aligned with their needs:

> I decided to participate in this research project because the purpose of the research is aligned with my conflicts in the classroom … we really need these theories to improve our practice and not think that there is only failure - we are surrounded by failure - when we work with disenfranchised people, we have the impression that we have not moved forward, we have not given much, so I thought this subject was very interesting (Joelma).

Besides identifying signs of learned helplessness in students, some teachers believed that they were also affected by learned helplessness:

> I had never heard this name, the learned helplessness syndrome - But, I totally identified myself with this. My students may also be victims of this syndrome, but I feel like that…Today *I have* the learned helplessness syndrome - today, I feel almost useless - I think I speak to nobody - at the school and out of school - I think we don't have (pause) like (pause) we don't have (pause) any relevance (Selene).

Even though the research was only beginning, the teachers who were at the school in the previous year and who had participated in the meetings where the research project was introduced had already developed some understandings of the theories. They were able to identify conditions of the environment that could lead to helplessness and conditions which could promote efficacy. Their capacity to understand the dynamics of learned helplessness, and apply the strategies to address it, was impressive. As they talked, they were giving names to common situations which they had dealt with in their everyday practice:

> I am already using - what you have told us - since last year - last year I did not use much but I started to observe more - I've become more aware…This year I have observed more - I am more aware of the need to motivate the students - when I realize that a student has that cognitive thing - expecting failure - I make connections - so it has given me more background - It is a learning process for me

> too but I am using the theories already, like showing the students that they can succeed and giving more emphasis on their efforts (Joelma).

When teachers talked about their jobs they referred to their actions inside their classrooms. They did not seem to perceive that their jobs involved any other actions at the school level. They did not think as a team. The teachers seemed to work more individually than in collaboration with others: "I think that individually, they (referring to the teachers) are very well prepared people. Individually, they try to do a good quality work" (Tamires). So, they did not perceive how their individual action could impact the school environment as a whole.

Need to develop new knowledge and skills.

Regardless of their years of experience, teachers acknowledged a need for continuing education in general, as well as specific training to deal with the unique conditions of the school context. This is what an experienced teacher said:

> The school board should offer more professional development, not those theoretical parts, but, practice like *you* are bringing to us. This is my conflict because I have the experience but the practice is distant from the formation. I have a high school diploma. I did teacher education in high school. I didn't go to college. So I have a lot of experience in the classroom, but I miss studying. I would like to have more opportunities to do more courses. I think the theory is important because I do many cool things, but if you ask me to put it on paper, I can't. I can't write about what I do because I lack theoretical background. I went to teacher education school 20 years ago (Jozi).

A younger teacher who has been working at the school for two years stated that her teacher education courses did not prepare her for real classroom practice: "When I started to study that I realized that there were a lot of things that I would not use … I confess that that is a dream … if they taught something closer to the reality we would make better use of it" (Fabiana). She added that, even though professional development is among the priorities of the Schools of Tomorrow Program guidelines, the training opportunities offered by the school board

were not context-specific. She believed that professional development would be more useful if designed to address specific school contexts:

> Schools of Tomorrow have many programs but the differences are the new strategies and the trainings that we have, but as was said before, we discuss a lot about the usefulness of these trainings because they could be more practical … the courses are still very theoretical - maybe they would be more useful if we could have a professional development related to the practice in these schools that have a different situation (Fabiana).

Besides the need to complement teacher education and the need to learn strategies to deal with the specific characteristics of the students in this school, some teachers acknowledged a natural need to be updated due to the dynamic nature of the job. New knowledge and new trends in education are constantly developing. Teachers need to adapt their teaching to new realities and new times:

> We really need to learn more, to study more - to know new things - the teacher cannot stop in time - the reality is what it is today, but maybe in five, ten years it will be a different one… The teacher is never completely ready - the realities of life change - what was valid yesterday isn't valid today and what is valid today will not be the same tomorrow. That's how I think (Jozi).

A school official recognized the school community, including herself, should study more: "I think we should study more, I told you that before, to study about how we can work with this public. Not only this public here in this area that surely has unique characteristics but the adolescent public in general" (Tamires). She explained that the school board's current administration centralized training. Training courses were more focused on general teaching skills rather than on context-specific strategies: "They are offering more courses for the global development of the teacher" (Tamires). Pedagogical coordinators had a more administrative than pedagogical role in the school. Rather than developing scholarship to improve practices, the pedagogical coordinator spent most of the center of study time transmitting instructions from the school board to the teachers:

> Nowadays the coordination is, in my opinion, a supervision to make sure that the things the school board provides are happening - if the booklets are being used, if the pedagogical orientations are being read … To verify the implementation of what the school board has planned and sent to the school. The school board designs it and makes us watch if it is being implemented. The study time, or planning time, every Wednesday, is not for theoretical studies, it is used in this sense, to inform the faculty about the school board deliberations, policies (Tamires).

Teachers believed it was impossible to teach in this school.

Teachers believed that they had the capacity to teach in a regular environment, but they were not equipped to teach in this particular school context:

> They (the students) are so undisciplined that you can't even propose a project to them. You can't even explain how the work will be done. Because each project you develop has steps to be followed, "we are going to do this step, and then that step" and we can't articulate this. Yesterday I was writing the steps of the task on the board and suddenly two students started to punch and kick each other I had to intervene - myself and the inspector - and then the whole class got agitated and ran out of the classroom - I couldn't contain all of them - they ran to the hall and created a great chaos - this kind of thing happens with a certain frequency here is this school. This jeopardizes any kind of pedagogical work. The pedagogical work is jeopardized by the discipline problems. Nobody can teach in this situation (Arthur).

Teachers believed that the school needed a twofold intervention: first, one that would address the students' behaviors; and second, an intervention that would unify teaching practices in the school. However, they expected the interventions to be implemented by external agents, rather than themselves. Participants believed that the causes of low achievements at that particular school were: (a) students' disruptive behaviors; (b) lack of parental involvement; and (c) negative influences of the environment outside the school. They did not seem to perceive that these variables could, in any way, be impacted by their practices. They did not perceive any possibility of taking control of the instructional environment.

Even with regard to this research, there was some incongruence in the teachers' intent to seek solutions for the problems they faced in the school. Participating teachers stated that they wanted to participate in this research to learn new strategies to improve teaching and learning in the school, which denoted some intention to take the control of the teaching enterprise. However, during the process of the research several teachers stated that they had expected the researcher to work directly with the students, which indicated they would be happy to relinquish control and let another person fix the environment for them. Some declared that they wanted an intervention that did not go through the teacher: "I think that this intervention demanded too much from the teacher … But (pause) actually (pause) I wanted to see something that depended more on the student" (Adriana). The researchers' perceptions from the teachers' attitudes was that they would have been pleased for someone to come and fix the students' behavioral problems so that they could "just" teach.

These incongruences in the teachers' behaviors may be a consequence of low instructional efficacy. (Bandura 1997) explains that efficacious individuals seek jobs where they can exert control, where they can exercise leadership, and where their personal characteristics are essential to overcome challenges. However, inefficacious individuals prefer to relinquish control to avoid stress. They project future failure, so they view challenges as threats, and fear the exposure of their inability to perform. These individuals choose jobs that do not demand leadership or primary control.

Congruently with Bandura's explanation, teachers in this school did not acknowledge or take advantage of some positive conditions of the school environment. The school had several positive conditions that teachers could use to improve the school's environment but the teachers did not perceive how they could make use of them. For instance:

- The Schools of Tomorrow Program guidelines presupposed training and connections with the community. This school was chosen to host this research project because it was a School of Tomorrow. However, the teachers stated that they had not received any training and they did not connect with the local community.
- The school board designed and distributed brochures with the regiment of the schools. Three brochures had especial relevance for teachers. One of them defined rights and responsibilities of teachers and students, as well as consequences for inappropriate behavior. Consequences for negative behavior included suspension, transfer to other schools in the system, and referral to the public authorities (Juvenile Court System). The teachers in this school did not know about this brochure. The second brochure informed parents, students, and local communities about the procedures used to calculate schools' achievement indices, the importance of achievement for the students , and how parents could help their children improve their achievements. The third one, targeted parents only. It invited parents to take a quick test to verify, from one to ten, what their grades were with regard to their participation in their children's school life. The test was followed by suggestions of actions that parents could take to be more participant in their children's school lives and "tips" on how to help their children succeed in school. The teachers in this school did not know these brochures. The pedagogical coordinator knew about them and she believed the teachers also knew about them. The teachers did not perceive that they could use these brochures to start a dialogue with the school's parents or with the community.

- Schools of Tomorrow have priority in the allocation of resources. In the last two years the school has received a myriad of material and human resources. This school has computers for teachers and students to use, wireless broadband internet, teaching materials such as course books, flip charts, science materials for experimental classes, and a platform with online lessons. Despite the resources, teachers kept using their traditional one-to many methods based on transmission of decontextualized content.
- Disruptive students were a minority. Negative leadership was exercised by five or six students only. The students, even in moments of commotion, did not hurt each other and did not attack teachers physically. Their behaviors seemed to be a result of lack of clear limits imposed by the school, lack of consequences for disruptive behaviors, lack of perception of the relevance of education, and lack of engagement in school activities. Students threw trash on the floor but they did not destroy the school's property, or other students' work. The school did not have graffiti or doodling on the walls or notice boards. In general, the researcher's perceptions were that, with appropriate school-wide interventions and more effective teaching methods, students' behaviors could improve substantially.
- Diminishing behavioral problems and increasing achievements are at the core of the school board's program Schools of Tomorrow. The school community could work with the program coordinators and seek support for local measures to ensure the objectives of the program could be achieved. Most teachers in this school did not know the Schools of Tomorrow Program; therefore, they did not take advantage of it.
- The school had a coordinator of after-school programs in the school for 20 hours a week who was not being fully utilized by the school community. During the eight

> weeks of research, the researcher only saw the coordinator of this program in the school once. The researcher did not perceive any signs that the work the coordinator was describing was being implemented in the school. Apart from the academic support for elementary students, there are no records of any other activity related to this program in the field notes. The participating teachers did not mention any work done in the school that could be attributed to the Schools of Tomorrow program. However, the pedagogical coordinator informed the researcher, in an email, that all of the resources which the school had received recently were related to the Schools of Tomorrow Program. She mentioned that the Schools of Tomorrow have priority in teacher allocation, as well.

If teachers perceived themselves more as educators, rather than as instructors, and saw themselves as agents capable of bringing about the transformation that they expected others to make, they would broaden the scope of their actions to impact the environment. However, as long as teachers view their job as circumscribed to the classroom they do not believe that they can impact the environment. Teachers need to be part of the change process, not receptors of programs and benefits; otherwise, they will not take ownership and they will not implement interventions which they do not understand or agree with.

Teachers blamed students for their impossibility to bring about learning.

All participating teachers blamed the students for low achievements. In the first interviews none of the focus team teachers attributed responsibility for low achievements to any variable that was not associated to some characteristics of the students. Teachers' attributions for low achievements included: (a) Students' disruptive behavior; (b) hardship of the students' lives

outside the school; (c) lack of understanding of the relevance of education; (d) lack of preparedness for school; and (e) lack of prior knowledge.

> Sometimes I plan what I will teach, I bring a text to work with them, copies for everybody, I prepare so well, when I get there the students don't want to learn. They start an argument with one another. They make paper airplanes with my copies, or the copies fall on the floor and students step on them, pretending they didn't notice the paper on the floor (Adriana).

Teachers complained about disruptive students because these students had a tendency of being aggressive towards other students and disrespectful towards the teachers and school personnel; however, the apathetic students did not bother the teachers: "Some (students) sit down and sleep in a corner. That doesn't bother me; at least they are not disrupting. So, if I have a situation of normal behavior in the classroom, which is rare, I can teach" (Adriana). Field notes taken during class observation contain several entries about apathetic, disengaged, and inattentive students during classes.

There were very few students in each class who displayed good behavior and engaged in class activities at the same time: "We have good students too, but that is the minority, maybe one or two in each class. And these suffer because if we cannot teach them, no matter how good they are, they do not learn as much as they could, and as they needed to be learning" (Adriana).

Another common attribution for low achievements was teachers' perceptions that the students could not learn because of the hardship of their lives outside school. Thus, regardless of what teachers brought to class, they did not expect the students to demonstrate interest or engagement. They did not believe that children who go through such a hard life can concentrate in academic activities:

> The students' family lives are very complicated. Sometimes I stop and talk to one student or another at the end of the class, I go to their desks, I try to get closer to them, to break barriers, but when I hear their stories – WOW! - it is complicated -

> How can a student like that come here and think that learning is interesting? (Tatiana).

Also, teachers believed the students did not understand the mission of the school and their roles as students. They did not perceive the relevance of education for their future lives. They went to school because the government gave their parents the equivalent of $ 70 USD a month for each child attending school. Arthur stated that some students perceived the school as a place of entertainment, rather than study: "…the perception of school is that of a place of entertainment or other things but study. They don't come here to develop as human beings". Another teacher added that "there are students who come to class to make noise, to play, to terrorize the school. I don't know what they think - maybe they think that being here is enough - maybe they don't believe they can learn anyway - maybe they don't think learning is important." (Adriana).

Finally the teachers attributed low achievements to students' lack of prior knowledge. Teachers perceived the school as low achieving; therefore, they assumed that the students did not have prior knowledge. Teachers believed that they could not teach these students in the same way they taught in other schools: "The difference is that they have less prior knowledge, you need to use easier language, you can't go too deep into the subjects because they won't understand it" (Tatiana). However, even though teachers acknowledged that they could not work in this school in the same way as they worked in other schools, teachers did not vary teaching methods to compensate for the students' conditions and promote better learning outcomes: "I think the teachers here believe that there is a uniform way to teach and they keep trying to teach in that way that they think is valid across the board" (Tamires).

Teachers' beliefs in the students' incapacity to learn prevented them from perceiving that they could organize their instruction in order to impact students' learning and behavior. Some acknowledged that they did not know what to do in that environment: "we arrive in the classroom and they kill the teacher's motivation - I always say: Gosh, what I am going to do here? What can I do to improve this? Frankly, I don't know" (Tatiana).

At first, all of the teachers' attributions for failure were specifically related to the students' disruptive behaviors. The other variants emerged as the researcher started asking the teachers to reflect about the fact they were attributing low achievements to a single cause. Then, the teachers reflected about other student characteristics which could explain low achievements and came up with a longer list. However, they still failed to attribute low achievements to any other cause but the student. It was only after the reality testing experience that the teachers made a more realistic list.

The learned helplessness literature indicates that individuals who make external explanations for failure may not develop low self-esteem or suffer from severed depression because they do not feel personally responsible for outcomes (Abramson, 1978, Peterson, 1993, Sahoo, 2002). Therefore, teachers' tendency to blame external factors may be a tendency to avoid internalizing responsibility. Internal attributions would imply taking actions that they did not believe they could organize or carry out by themselves. Therefore, as Bandura (1997) explains, by blaming others, teachers avoided the stress of taking the control.

Teachers blamed families and environment for students' behaviors.

Teachers described the students in this school as misbehaving, disrespectful, aggressive, and even violent: "…the students are very complicated in the essential things - the basic things - they treat each other in a very aggressive way - they are super aggressive - they are so

undisciplined that you can't even propose a project to them" (Arthur). They attributed the students' behaviors to the families' failure in preparing the students for the social interactions and responsibilities of schooling. Teachers believed that students should learn at home to respect others: "They don't know the basic rules of socialization, respect. We learn it in our childhood and bring it to the present. They don't have this" (Tatiana). Some teachers were afraid of applying more severe discipline in the classroom because they were afraid of the students' parents or the drug dealers that "protected" the local community in exchange for a safe hiding place. A participant stated that sometimes fathers went to the school carrying a gun, or even more than one gun, or under his shirt in a noticeable way, to intimidate the school community. What they implied was that, besides not educating their children at home, some parents would not allow the school to do it. When the participant told the researcher about this episode, she asked the researcher to turn off the voice recorder. The researcher turned the device off and registered the episode as field notes:

> If the teacher does something that hurts them (the students), they can call the Conselho Tutelar (the juvenile court agents who enforce the rights of the child and adolescents) or they can call the "guys" (drug dealers). We work here. We have to come here every day. Nobody is crazy to confront them (participant asked not to be identified).

The negative influences of the environment outside the school were also a source of complaint for the teachers. They believed that after the family, the environment outside the school exerted the greatest influence on the students' development. There was little that the school could do for the students. Dowdney (2003) explains that in some favelas, drug dealers are the only "models of leadership"; they exhibit power and wealth in the allies of the favelas. Drug dealers hold a superior status in the favela because they have the women they choose, wear expensive clothes, and carry impressive weapons. They do favors and "protect" the local

community in exchange for their silence and a safe hiding place. In these environments children witness all sorts of violence from a very young age. In most favelas, the school is still the only presence of civil society in the community. The teachers believed that the students who lived in such environment could not be "normal":

> The disadvantaged children cannot learn because they bring serious life problems. The mother is using drugs, the father is stealing or the father was shot - do you think the child is (pause) normal? This child is different ! You have to see the child as an individual … Do you think it is normal for a child to stay up all night - awake because of gun fights? They can't go out to buy bread because there is a dead thief at their doorway? (most Brazilians buy fresh French bread for breakfast every day). This is a constant situation… If you stay here until 5Pm you see them all in front of the school, armed to their teeth. It is constant in the children's lives, they are not normal. But is he so fragile that he cannot learn? No! Is he like the others? No! I think that the Município had to find a balance but I don't see it (Joelma).

The teachers implied that the children did not receive at home the social skills and education that they needed to develop positive interactions in the school or in the society outside the community where they lived. Teachers did not perceive themselves as capable of providing the education that the students lacked. Teachers' statements and field notes led the researcher to consider three reasons why teachers did not perceive themselves as capable of providing such education or using their instructional practices to impact the students' behaviors: first, as stated in previous quotes, teachers did not believe they were prepared to deal with this clientele; second, middle school teachers believed that their main job was to teach rather than to "educate" students on how to behave: "I have two classes that I can consider from regular to good. Because they allow me to interact in a more direct, more objective way and reach a reasonable success" (Selene). Another middle school teacher said: "I feel I am capable to teach; the question is if they will allow us to teach them. If the difficult student gets to concentrate a little, I can teach him, sometimes I see some progress" (Tatiana); third, teachers feared the parents who might not

appreciate strict disciplinary measures at the school and they did not believe that the school policies or practices would back them up if they decided to request better discipline in their classrooms: “With the kind of students we have and these policies that do not allow us to do anything to discipline the students (pause) this is making teaching impossible … the students can complain about us, they can call the Conselho Tutelar, their parents, the ‘guys’ (pause) - the teacher and the school have their hands tied up” (Adriana).

Data derived from final interviews with focus team participants.

Final interviews followed the same procedure as initial interviews. They were conducted during the last week of the research after the teachers had created their lesson plans. At the end of the interview the researcher told teachers that they were free to make any comment they wanted being related to the research or not; literally anything. None of the teachers used the free topic opportunity to complain about the students or the school environment. This attitude was different from the initial interview as described in step three of the data analysis. The categories derived from final interviews before merging were: (a) informing the objectives attracted students’ attention; (b) identifying learned helplessness and addressing it in the classroom; (c) the importance of theoretical background for practice; (d) participants' perceptions of the impacts of their participation in the research; (e) residue of the research in the participants’ mind; (f) intentions to continue using the knowledge and skills developed during the workshops in the future; and (g) participants’ perceptions with regard to the use of the lesson plan. After the categories were merged the final spectrum of the final interview categories included: (a) participants’ reactions with regard to their participation in the research; (b) teachers changed their opinions about the importance of theory for effective practice; (c) teachers’ perceptions on

the use of lesson plan; and (d) participants' intentions to use the theories after the end of the research. These categories were developed as follows:

Participants' reactions with regard to their participation in the research.

This category includes teachers' reactions to their participation in the research and their perceptions of impact on themselves and on their students. The group's overt expectations were to develop new knowledge and learn new strategies which they could use in their classroom in order to improve their relationship with the students, establish a more positive classroom environment, and improve learning outcomes. However, as indicated in previous categories, what teachers demonstrated was that they expected the researcher to work with the students so that the students would not display helpless behaviors anymore and teachers could teach them: "At the beginning myself and some other teachers thought that you would work with the student, and you actually worked with us but it was positive because we could make a self-evaluation" (Jozi). Nonetheless, at the final interview, all of the focus team participants declared that their initial expectations were, indeed, fulfilled.

Participants' reactions in the final evaluation survey showed high indices of participants' satisfaction with their participation in the workshops. Data derived from the final evaluation survey was consistent with teachers' statements in the interviews. They demonstrated high indices of satisfaction with the research processes. During the course of the workshops teachers realized that, even though the research did not involve the students directly, the focus was on creating conditions to impact learning. The impact on learning goes through the teacher and learning is a consequence of teaching: "But, actually, in truth, everything depends on the teacher" (Adriana). So, when they stated that their expectations were fulfilled, they were

referring to their overt expectations. They perceived that the application of the knowledge, skills, and tools developed during the workshops had direct impact on the students. They did not "waste" their time:

> Actually I was very happy with the results. We were expecting something different, the research took a spin and now seeing the results in my class is that I am more relieved because I have not wasted my time - this was not in vain - there has been impact. And at the end of the year we will inform you of the final results because I think there will be future impact (Fabiana).

All of the participants articulated their thoughts about the newly constructed theoretical knowledge, provided examples of how they have put the theory into practice, and reported perceived results. The first quote focuses on the use of the MUSIC Model of Academic Motivation:

> Actually I was very happy with the results. We were expecting something different, the research took a spin and now seeing the results in my class is that I am more relieved because I have not wasted my time - this was not in vain - there has been impact. And at the end of the year we will inform you of the final results because I think there will be future impact - It was good in the sense that this was not only one more study, but the research that has generated the impact that we expected…I was discussing with the other teachers in the other room a few minutes ago was the following: what impacted was related to the motivation that we can generate in the student – because before I didn't, at any time, inform the objectives to the students - why they were learning that - what they were learning that for - and this makes a difference because they see that that is not useless What they are learning, why they are learning that - what we are teaching them is not useless, they are learning it now to put it into practice sometime in their lives and this makes them feel more motivated - get more interested- because - I got that acronym MUSIC to plan the lesson and we saw that that helps, helps the students' interest, increases participation, so they can learn better, they can have better achievements with respect to discipline and everything else that we are teaching them … Because when you call them to participate and make them interested, automatically, the discipline, with regard to behavior, is completely different. They are interested, so they try harder to pay attention. They are less disruptive, create fewer problems, and we can teach better. And with that - raising their interest - the results at the time of the assessment are also better. I think I am having results already because I had students in academic support since the beginning of the year who won't need support anymore. We did a diagnostic assessment two weeks ago and I have seen some differences. This is a slow process but I believe that if we continue in this line of work, we will be able to

> achieve our goal to have all third graders reading and writing by the end of the year (Fabiana).

Related, the second one focuses on how the teacher applied the learned helplessness theory in her classroom:

> An example was about a student in my class who felt pain when I asked him to do some writing tasks. When I heard about learned helplessness, when you talked about it and gave examples of the characteristics, I started to identify some cases, two particular cases but one had an immediate response. There is this new student who came to our school this year. Every time I started some kind of work and asked him to accomplish some task that he did not understand, he became really desperate but I did not understand it that way. He complained of headache, stomachache, sometimes he said he could not see well. I always sent him to the nurse. But after this research, I started to observe his behavior. I realized that it happened more often when he was requested to produce something, when he had to write something. I noticed he had problems with writing. So, I started to talk to him, I got him to sit by my side and I started to ask him questions, like: 'do you like soccer?,' 'I was told you play well,' 'they say you are a goal keeper…' So, he started to feel better around me, I tried to find things in which he was successful to make him believe that he could succeed in other things. And, the incidence of headache and stomachache diminished and I started to work with him in a different way. I don't give him any writing task straight away. I work with him individually before the task. I think he had a specific kind of helplessness, he didn't feel capable of doing the tasks so he avoided them by complaining about pain because he wanted to be send out of the classroom. The moment I could identify what was going on, I could address it by working in a different way and he started to feel more confident. I started to praise his efforts and now he tries harder until he gets his tasks done (Juliana).

These quotes demonstrated that at least some teachers: (a) understood the theory; (b) intentionally implemented it, monitored and evaluated the effectiveness of their strategies; (c) perceived the success of their efforts; (d) attributed changes to their instructional practices; (e) perceived the connection between teaching and learning; and (f) were able to make expectations of future success.

Teachers changed their opinions about the importance of theory for effective practice.

This category includes teachers reactions with regard to the importance of the theoretical studies to be able to practice their jobs in a cognized way and their expectations of using this knowledge in future practices.

Teachers who complained about the theoretical nature of their teacher education courses and training courses offered by the school board, in the first interview, understood, during the course of the workshops, that theoretical background was important for effective practice. Teachers developed the understanding that theoretical knowledge helped them plan their own strategies and implement them in an intentional and cognized way. The new metacognitive skills made it possible for teachers to monitor the effectiveness of their efforts and evaluate results: "The difference was that I have applied some things in a conscious way because, before, I used things intuitively. I wasn't cognizant of what I was doing, if it was right or wrong; if it was working or not" (Juliana).

Teachers could see for themselves the importance of understanding the rationale behind their practices. Teachers were not presented with a set of strategies that every one of them should use to alleviate learned helplessness or increase self-efficacy as a quick fix. They were led to understand the dynamics of both theories and apply metacognitive strategies as tools for accurate attributions for causal explanations. They created a lesson plan with elements that focused on raising students' interests, engagement, and success. But they applied these theories to their own practices. After they experimented with the lesson plan, the examples they used to illustrate how they operationalized the theories were taken from their own practices. This demonstrated that they owned the processes; they were able to reflect about their practices, and incorporate the new knowledge and skills into what they would normally do:

> I have become more aware about things that I used to do in an intuitive way … I had success with some things and, in future times, I used whatever went right just because it went right - but when you came, you gave me the theoretical background for things that I already did - I got better - I think I am improving - The issue of the objectives, for example, you suggest telling the student - I thought that was very interesting … Last Friday, I tried to use the lesson plan step by step, sometimes I was in doubt, "Am I doing it right?" The initial parts of the lesson plan are essential. How they store information in their mental file folders, like we discussed in the workshop, was very useful – prior knowledge, right? - I taught geometrical shapes last Friday and today two students in class …, one picked up a square towel and the other one picked up a rectangular one. One of them told me, "look, auntie, his towel is *rectangular* and mine is *square*." And I said, "isn't that nice!" Then I thought that it was a class that they really learned - and - it was a very enjoyable class. That was even better, I not only knew that they had learned, I know how they got there, I knew the processes that happened in their minds and I knew how to explain what I had done for that to happen (Joelma).

Teachers' perceptions on the use of lesson plan.

This category contains participants' statements about the lesson planning practices prior to the intervention, their reactions with regard to the implementation of the new lesson plan, and some perceived impacts of the elements of the new lesson plan.

With regard to lesson plans, there was a difference between elementary and middle school teaching practices. Elementary teachers planned their lessons according to a template provided by the school board. Teachers stated that the lesson plan template offered by the school board was content-centered. Teachers did not need to define objectives or describe strategies. All they did was list the content items they were going to teach, what materials they were going to use, and the schedule for the week, month, or bimester:

> I started working here last year. Before that I had student-teaching experience where I had to do lesson plans with objectives, state how those contents would be delivered, all of that. So when I started here, I started doing my lesson plans like that too but I heard them say that: 'you don't need to state objectives, you don't need to inform your goals, you don't need anything (pause) not even the activities. You just need to inform the content you are going to teach'. So, I distanced myself from that structure I used before as I had learned in college.

> Now (pause). Now, you've brought everything back: why objectives, what methodology to use to teach those contents' I am curious about this lesson plan we are going to create (Juliana).

Middle school teachers did not usually make lesson plans. They had their objectives in their minds and made a list of topics to guide their sequence during a certain period of time. Some used a course book or the curriculum provided by the school board as a type of syllabus:

> Planning a lesson with the objectives clearly stated, this was a wake-up call for me because in your everyday practice you have your objectives in your mind but you don't stop to write down your class objectives because you don't have time for that, but you have the objectives in your mind. And I think I do this in my own way, but when you decide to write down the objectives you really have to think about them. I think this is important for the teacher - to better orient the class development. So, I think participating in this research brought this back to me, this class planning thing, that I had forgotten about. Well, I had not really forgotten about it; I just did not do it concretely (Adriana).

After the theoretical workshops, focus team participants (including elementary and middle school teachers) developed a lesson plan to operationalize the theories. After the lesson plan template was ready to be used in their classrooms, participants evaluated the lesson plan and completed a survey. The purpose of the survey was to verify teachers' reactions as to the applicability of the lesson plan, their perceptions of utility of the lesson plan to improve teaching and learning, and their intentions with regard to the application of the lesson plan in their classes. The rationale was that a physical document showing their dispositions towards the tool, could work as concrete evidence of their commitment with the implementation phase and that could foster ownership and maximize implementation efforts. Teachers in this school had a history of not implementing some of the interventions sent to them by the school board. All focus team teachers who used the lesson plan, had at least one class observed, and received feedback from the researcher.

All focus team participants stated that their experiences with the new lesson plan was positive: “My experience with the lesson plan was nice, I like this framework better than the one that I used until now. It is more systematized and simplified within the theme you are working” (Jozi). A middle school teacher found that the experience was valid. It worked with some classes better than with others but he attributed the success of the lessons more to the absence of some disruptive students than to the lesson plan itself:

> The experience of the lesson plan was a valid one. But, to be honest, the practice, for example, you observed the class, I applied the lesson plan in my classes, it worked with some classes more than with others. But, in the classes where it worked (pause) much of the success of the class (pause) of the class flow, unfortunately, was due to the absence of some students whom, when they are present, they make the class impossible to happen because of their appalling behavior (Arthur).

One of the most experienced teachers in the school said that the lesson plan brought the excitement of planning back to her:

> This weekend I got together with another teacher who is my friend to plan our classes together using the lesson plan you introduced to us - it was very nice - because at the end I was excited about teaching that class. I started to plan new things… (Selene).

Teachers could implement the Nine Events of Instruction (Gagné, 1985) and the MUSIC Model of Academic Motivation (Jones, 2009). Two items of the lesson plan were perceived by teachers as having the greatest impact: the second event of instruction, ‘inform learners the objective of the lesson’; and the second item of the Music Model of Motivation, ‘**U**tility’. Actually, these two items complemented each other. The purpose of ‘informing the objectives of the lesson to the learner’ was to demonstrate to the learners the utility of what they were going to learn (Gagné, 1985). In this lesson plan, the Nine Events of Instruction informed teachers actions, whereas, the MUSIC components represented the effect of such actions on the student. The teachers used the events of instruction to create instructional conditions that ensured the

MUSIC elements would happen. Teachers reported impact of these two specific elements on the students' interests and engagement.

> I did not have the habit of getting to the classroom and informing the students about the objectives of that class – sometimes I did it unintentionally but when you gave us this orientation (pause) now I do it intentionally. As soon as I go into the classroom I tell them what the objectives are. I write them clearly on the whiteboard. 'You are going to learn this because of this' and when I told them and I said why they were learning that content, just the expression 'what you are learning this for', I didn't use the word 'objective', but 'why learn this' was enough - they stopped what they were doing, looked at my face curiously with some expectation to see where I am going to get in that class. It created a cool impact. When I informed the objective, automatically, I was doing what the MUSIC says about interest. I liked this very much. It also helped them evaluate if they had reached the objectives at the end of the class, so they could control better what they were learning. I did not know exactly how to give control to the students but I think this was it. If they had an objective, like, 'I am learning this, for this reason' - so at the end of the class they could ask themselves, 'have I learned what she said I would?' They could come to their own conclusions about their learning. I thought: 'If I tell them what they are going to learn, I explain why they are learning that, and I show them how, at the end, they will want to know if they have really learned it or not. One thing leads to the other (Tatiana).

Tatiana was a middle school teacher but her experience with the lesson plan was very similar to that of Fabiana, an elementary school teacher (compare quote in category: Participant's reactions to their participation in the workshops).

With regard to the metacognition component of the lesson plan, teachers demonstrated difficulties to incorporate the planning, monitoring, and evaluation components before, during, and after activities. A school official confirmed the researcher's perceptions that the metacognition part was not fully incorporated in the lesson plans. Metacognition was perceived as a difficult concept to grasp and to implement. The time spent in the reality testing exercise helped teachers develop better capacity to exercise fact-based reflections, which relate to metacognition practice; however, the amount of time devoted to the understanding of

metacognitive knowledge, to the point that teachers could make cognized use of the metacognitive regulation components in their classes, was not enough.

The teachers could practice metacognitive reflections. They could think about their current ways of thinking about the school environment, the students, and their teaching practices and compare their current thoughts with how they used to think before learning about learned helplessness and self-efficacy. However, they could not articulate their understandings about the metacognitive theory clearly; they could apply the metacognitive strategies in the lesson plan but implementing them before, during, and after the class activities was a challenge.

The results of the quantitative tests confirm the qualitative data. Metacognition test results showed smaller practical significance than instructional efficacy and learned helplessness The school's coordinator said:

> I think we learned a lot but I think some parts were too fast. There are things that we have to explore more - this conceptual thing of metacognition for example - I noticed some difficulties when people wanted to make the lesson plans; not really in the planning activity, the events were fine; but in the understanding of metacognition - but I understand it had to be fast because you ended up going through another path of self-evaluation. You worked with the school conditions. To explore everything this project would have to last a semester or a school year.

Participants' intentions to use of the theories after the end of the research.

This category demonstrates how participants viewed the possibility of continued use of the knowledge, skills, and tools develop during this research project after the end of the process.

The teachers believed that participating in the workshops had left a cognitive residue that they would carry with them when planning their future work, even if they did not put all of the strategies into practice in an intentional way: "I think there will be a lot of residue. I wouldn't even say a residue because a residue is something small and unintentional, I think it was very useful and I know I can use it" (Arthur). Another teacher concurred by saying: "I think that the

work you did left a seed in each one of us" (Adriana). A school official said that the teachers developed a standard against which they could measure the effectiveness of their practices:

> I think it was useful to fundament their work, to know that if something is not going well, it is because they are not applying the theories that they know would work. So I think it works as a standard even if they do not fully apply the theories … When you leave us, we will continue working. So, until the middle of the semester, I think the group will be applying these points that we had in common (she was referring to the commonalities between the school communities' goals and the goals of this research) - I believe they will (Tamires).

Some teachers stated that the participation in this research inspired them to do more academic work:

> As I said before, it was very important to do the reflections about our work – to learn - because we learned new things, and I think it also made us view our work in a more scientific way. I think this is important. You told us to keep a record of our experiences. Our experiences can become and action research. I think this is an interesting thing that, at least for me, is already working … But now I want to do it in a systematic fashion - in a way that it can even become a research action or a publication. This is something that I had never considered before but that from now on (pause) a seed was sowed – I need to take this next step (Arthur).

The final evaluation survey had two items which depicted participants' intentions to continue pursuing the knowledge, skills, and tools developed during the workshops. One hundred percent of the participating teachers stated that they were already implementing the strategies in their classrooms and that they intended to use them in other places; however, 25% of the participants said that they were not willing to implement them in this school. The data form the survey is congruent with the initial interviews because some participants did not believe that all participants would continue the implementation: "I don't know if the group will have the commitment to continue. I am honest (pause) because of the group (meaning the group of teachers in this school)" (Adriana).

Conclusions about data collected during interviews with focus team teachers.

Qualitative data showed differences in teachers' attitudes from the beginning to the end of the intervention. Initially, teachers focused conversations on difficulties; on negative factors which prevented them from doing a good job. Categories derived from the first interview revealed a rather defensive attitude on the part of the teachers with regard to their perceived impossibility to use their instructional practices to bring about learning. They believed that they were good teachers but the conditions of the environment were responsible for low achievements. Towards the end of the implementation of the intervention, teachers focused on their practices rather than on the adversity of the environment. In the final interviews, teachers hardly mentioned students' behaviors. Research indicates that inefficacious teachers have a tendency to develop negative attitudes towards their students and the conditions of their performance environments (Warren, 2002); they attribute low achievements to external factors, such as the students and their families (Thompson, 2004); and spend their time talking about the difficulties of teaching, rather than seeking solutions for the problems affecting performance (Melby, 1995). The positive changes in participating teachers' conversations may indicate a change in the focus of their attention and in attitudes towards performance. Thus, the teachers' positive attitudes towards the end of the workshops may have been as consequence of the increase in their instructional efficacy, which was also detected in the quantitative test results. Table 16 contains contrasting statements made by the same teachers in the initial and final interviews:

Table 16

Participants' statements during initial and final interviews.

	Initial interview	Final interview
Joelma	"When we work with disenfranchised people, we have the impression that we have not moved forward."	"I think that some students can only learn if we take them individually and consider their unique difficulties. I am really happy to have more theoretical background. To promote the students' success in order to decrease the helplessness. Because the helplessness comes from failure, repeated failure, and you said, they need to experience success, and his success needs to be a result of efforts, the feedback is important too. You need to tell them, "hey you have succeeded" It doesn't matter if by intelligence or efforts. Sometimes the child is intelligent but still fails to learn because of the helplessness. We need to investigate why the child is failing. Now I have another view of the problem. After this research, I have another view. I am more cognizant."
Selene	"I consider myself as suffering from the same syndrome. I think I am living a moment of great helplessness."	"I got together with Adriana … to plan our classes together using the lesson plan you introduced to us - it was very nice because at the end I was excited about teaching that class. I started to plan new things…"
Tatiana	"They kill the teacher's motivation"; "how can a student like that come here and think that learning is interesting?"	"I said why they were learning that content, just the expression 'what you are learning this for' … they stopped what they were doing, looked at my face curiously with some expectation to see where I am going to get in that class. It created a cool impact."
Arthur	" When I started here I started doing lesson plans, but I heard them say that you don't need to state objectives, you don't need to inform your goals, you don't need anything…not even the activities, you just need to inform the content you are going to teach."	"I think that besides the reflections about our pedagogical practice, the realization that the motivation we have to come to the school and work with the student also affects your teaching and that this practice needs to be contextualized was important for me. This can even impact the decision and future policies by the school administration. Teachers' motivation is important for quality teaching."

Juliana	"When I started here I started doing lesson plans, but I heard them say that you don't need to state objectives, you don't need to inform your goals, you don't need anything…not even the activities, you just need to inform the content you are going to teach. So, I distanced myself from the best practices I used before, that I had learned in college."	"Now you've brought everything back - Why objectives, what methodology to use to teach those contents … The best thing is that things are changing. Things that were considered normal are now changing … Minimally, but they have already started to change … this project was a sort of nudge for those who think that some behaviors in this school were normal just because the school is located in a favela or because they have been here for so long that they cannot tell the difference between good and bad anymore."

Qualitative data confirm positive impact of the intervention on teachers' ability to understand the learned helplessness phenomenon and how to organize their instruction to address the problem. Therefore, it is safe to state that: (a) the intervention had a positive impact on teachers' beliefs about their capacity to mitigate learned helplessness; and (b) the lesson plan used to operationalize the theories had a positive impact on teachers' practices, students' interests, and engagement.

Triangulation of Qualitative and Quantitative Data

The analysis of data in a formative and design experiment not only informs how the study answered the research questions, but also determines the ecological and consequential validity of the study. This happens in two ways: first, by comparing quantitative and qualitative data to verify congruence between the developments throughout the phases of implementation with the final results; second, by keeping track of the decisions made during the implementation process in order to verify the consequences of such decisions upon the attainment of the research goal.

The triangulation of quantitative and qualitative data in this study, for the most part, confirmed each other, which boosts confidence that at least some of the results shown derived from the implementation of the intervention. Participants' responses to questionnaires were

consistent with data derived from interviews, diary entries and field notes as is demonstrated in the following examples.

- Qualitative data showed that most participants (with the exception of one teacher) had a higher education degree, professional experience, and abundant material resources to teach; nevertheless, teachers reported being unmotivated and inefficacious. Quantitative data confirmed teachers' low teaching efficacy. Furthermore, government data indicated that the achievement indices of the school still needed to improve to reach the expected levels of performance (INEP, 2012).
- The elementary school teachers worked more cooperatively than the middle school teachers, were more active participants in the research, and were described by the school officials as more efficacious than middle school teachers. The elementary school's IDEB (Brazilian school achievement index) was consistently higher than that of the middle school (see Table 1 in chapter one for details).
- Qualitative data showed that there was a small group of misbehaving and even violent students who disrupted the school environment but the majority of the students were manageable. However, instead of taking control of the school dynamics, teachers felt cornered and believed that they were incapable of teaching in that particular environment. The students' misbehavior and low achievement were perceived by the teachers as an objective noncontingency. They believed in the impossibility of bringing about learning in that environment; and this belief generated a sense of futility about their efforts, which resulted in expectations of future failure. These expectations established a pattern of low outcome expectancies that undermined motivation to teach. Quantitative data confirmed that teachers in this school scored

highly on the “at-risk” interval of the helplessness continuum before the intervention. Even though teachers did not score on the “helpless” interval of the scale, they displayed deficits related to the three components of learned helplessness: contingency, cognition, and behavior. Contingencies referred to objective negative events perceived by teachers as uncontrollable. Some examples include: students’ behavioral problems; consistent low achievement; and teachers’ beliefs that they had not received appropriate training to deal with the context of this school. Cognition referred to the attributions teachers made for the perceived uncontrollable events. Teachers believed in the futility of their efforts and expected negative outcomes because they made external attributions for the impossibility to succeed at this school. As a consequence, they displayed lack of motivation to seek solutions to improve students’ behavior and achievement. They failed to implement interventions sent by the school board, failed to use the instructional technology resources available, and did not vary teaching strategies to improve learning or diminish behavioral problems.

- Qualitative data showed that teachers blamed the students and their parents for low achievement and they did not take responsibility for the students’ learning outcomes. They did not relate the impact of teachers’ practices on students’ achievement because they made external attributions for failure. Seligman (2006) explains that helpless individuals who make external attributions for failure do not take responsibility for outcomes. Seligman (2006) states that individuals who make external attributions do not make self-worth comparisons, so they do not feel guilty about not being able to perform. They believe that no-one in the same situation would be able to perform better. Bandura (1978, 1997) explains that expectations of future

failure caused by low outcome expectancy, rather than efficacy expectancy, does not affect the individual's personal sense of competence. Quantitative data confirmed that teachers scored low in both optimism and instructional efficacy.

- Besides signs of helpless deficits related to all three components of learned helplessness, qualitative data indicated that participants displayed some behaviors associated with the three characteristics which helpless individuals tend to develop: Catastrophization, overgeneralization, and personalization. Signs of catastrophization were observed when teachers reacted emotionally to events, blowing them out of proportion to explain their inability to teach in those circumstances. The school community described the school as if it was the worst school environment in the district. However, most of the students in class were apathetic, rather than disruptive; whenever students fought, they did not get hurt; they did not target the inspectors, the teachers, or the school personnel; they did not destroy school property or other students' work. When referring to the students' misbehavior, low achievement, lack of parental involvement, and lack of appropriate conditions to teach, teachers, inspectors, and some staff members overgeneralized and catastrophized by using absolute terms and definite pronouns to generalize the situations: "*The* students in this school," instead of some students in this school. "*The* parents do not care." "*Nobody* can control these students." They focused on one incident or one individual and generalized it to the entire population. They referred to one student who jumped over the school wall to run away from class. Then, they immediately generalized bad behavior to all students: "You see, teacher, *the* students here are just like this. Nobody can handle them. There is no hope for them anymore." Teachers often said, "*nobody*

can teach in this school," "nobody can handle these students." "Why do they do this to me?" "I am the one who care for them the most." They failed to recognize the positive changes that had been brought to the school. Teachers' perceptions of impossibility to teach were blown out of proportion because, despite their complaints, the school was able to achieve the targeted IDEB in 2011; so, indeed, learning had happened. At this point, one might think that the results demonstrated in the helplessness scale were not dramatically low. Teachers scored in the at-risk interval and not in the highly helpless end of the continuum; however, Seligman (2006) explains that individuals do not have to be deeply helpless to display helpless deficits. Even average pessimism, in times of distress, can impair performance:

> If your pessimism score is in the average range it will not be a problem in ordinary times. But in crisis, in the hard times life deals us all, you will likely pay an unnecessary price…You will become very sad. The zest will go out of living. It will be very hard for you to get started on anything challenging. The future will look bleak to you. And you will be likely to feel this way for weeks or even months…If you have an average degree of pessimism, you are going through life at a level somewhat lower than your talents would otherwise permit you…even an average degree of pessimism drags down your performance in school, on the job, and in sports. This is true of physical health as well. You will likely suffer the chronic diseases of aging earlier and more severely than necessary. Your immune system may not work as well as it should; you will probably suffer more infectious diseases and recuperate more slowly (p. 53).

- Qualitative data showed that teachers believed in their personal capacity to teach in a regular environment but demonstrated disbelief in the capacity to teach in that particular environment. Quantitative data confirmed that in the instructional efficacy test, teachers demonstrated higher personal efficacy and lower general efficacy. In a continuum form 5 to 30, participant pool mean was 17.43 for personal efficacy in the pre-test and 20.4 in the post-test; whereas for general efficacy the pre-test mean was 10.06 and post-test mean was 12.6875. Also, in the final evaluation survey, when

asked if they intended to use the knowledge and skills discussed in the workshops in that particular school or any other school, 74.75% of the teachers declared that they intended to use the knowledge in that school, whereas 100% declared that they intended to use it elsewhere which indicates that approximately 25% of the participants still hesitate to implement new strategies in that particular environment.

- Qualitative data showed that, after the intervention, participants believed that their participation in the workshops had an impact on their teaching. Each one of the participants could articulate at least one impact from their participation in the workshops. Quantitative data confirmed statistically significant differences in the participants' levels of optimism, instructional efficacy, and metacognition.
- Qualitative data showed that, after reflecting about their initial expectations for their participation in the research, teachers stated that their expectations were fulfilled. In the final interview teachers could articulate what they learned, how they applied the new knowledge, and how they perceived the practical results in their classrooms. Quantitative data confirmed that teachers' had increased teaching efficacy at least to a level of moderate practical significance.
- Qualitative data showed that one of the most recurring impacts cited by teachers for their participation in the research was the development of fact-based reflective practice which they exercised specifically during the reality testing experience. In the final interview several teachers mentioned the importance of the self-reflections during the research process. Quantitative data confirmed statistically significant difference in the participants' metacognitive ability, which is essential for the capacity to exercise fact-based reflections.

Some items of data were not addressed by the quantitative instruments and derived from the qualitative sources: (a) participants perceived the need for more theoretical studies to understand the fundamentals of practice. Participants acknowledged that better understanding of the theories behind the practice helped them monitor the implementation process, control the changes, and evaluate the results; (b) participants' perceived the needs for continuing education with practical strategies designed to address their particular problems; (c) participants wanted to continue developing reflective practice; (d) participants believed that their participation in the workshops had an impact on the way they view the students; and (e) participants believed that the application of the lesson plan impacted some students' interests, behaviors, confidence, and efforts to learn.

Factors that Contributed to the Validity of the Study

The study incorporated the elements and benefitted from the methodology.

Formative and design experiments are oriented by the pursuit of a goal that seeks total or partial transformation of teaching practices and/or the instructional environment by means of innovative experimental methods (Reinking & Bradley, 2008). They are intervention-centered and have a solid theoretical nature. Both the intervention design and changes implemented are anchored in the theories that guide the research process. The internal validity of the study can be established by the congruence of the intervention with the theories which oriented the research design, the consistency of decision-making during the implementation of the intervention, and the consequences of implemented changes for the attainment of the goal. Therefore, before presenting the internal validity of this study, a description of how this study incorporated and benefitted from the main guidelines of the methodology is included below:

Goal-oriented.

The first articulation of the goal of this study was established after preliminary review of literature that indicated that: (a) The Brazilian public school system needed to improve quality (UNESCO 2010/11; Vasconcelos 2010); (b) public schools, in general, have displayed low achievements and some schools also reported high indices of student indiscipline (INEP, 2010; Sampaio and Guimarães, 2009); (c) due to the adversity of the educational environment, students and teachers could have been affected by learned helplessness (Bandura 1997; Dweck, 1975; Peterson et al., 1993; Nunes, 1990); (d) teachers working with low SES and low achieving students may develop low outcome expectancies and experience low instructional efficacy (Bandura, 1997; Tschannen-Moran et al., 1998); (e) previous research found that teachers working with low SES students may develop negative attitudes towards the students and their families (Thompson, 2004; Warren, 2002); and (f) teachers with low instructional efficacy, who develop negative attitudes towards their students, tend to blame students and families for low achievements (Thompson et al., 2004). The authors added that teachers who blame students and their families do not regard themselves as being responsible for students' achievements. The tendency to blame external sources for outcomes is also found among universally helpless individuals (Abramson et al., 1978; Sahoo, 2002). The literature also indicated that, in such a context, teachers could benefit from professional development designed to change teachers attitudes towards their students, increase instructional efficacy, perceive the impact that instructional practices have on students' learning and behavior, and, finally, develop a greater sense of responsibility for students' learning outcomes (Woolfolk & Hoy, 1990; Swackhamer et al., 2009; Thompson et al, 2004; Tschannen-Moran et al., 1998).

Metacognitive intervention for the alleviation of learned helplessness

The initial goal, derived from a preliminary literature review, was to provide teachers with a professional development designed to address their instructional efficacy with regards to teaching the specific demographics of low achieving public schools located in low SES neighborhoods. This goal was introduced to some officials of the Rio de Janeiro Municipal School Board who confirmed the researcher's assumption that some school communities in Rio could be affected by learned helplessness. The school board had been trying to implement programs and projects without much success in some schools. Some school communities did not seem to believe that the interventions would work for their students, therefore, they resisted to implementing them.

After several interactions with the school board and the school community, as described in chapter four, a new goal was co-defined by the researcher and the school community. As formative and design experiments are goal-oriented, this agreed-upon goal informed the design of the intervention, the content of the workshops, the activities developed during the implementation phase, as well as the change processes during implementation. All actions taken should concur to the attainment of that goal. Therefore, the goal and orienting principle of this study was to investigate if participation in collaborative professional development workshops on learned helplessness, self-efficacy, and metacognition would impact teachers' beliefs in their capacity to address students' helplessness.

Intervention-centered.

Feedback from the teachers and the environment informed the progress of the intervention; from the first workshop, mandates of the environment forced changes in the implementation plan. One example was the first workshop when teachers were stressed at the

beginning of the school year, the workshop could not be held as planned, the questionnaires that were supposed to be completed during the workshop were completed at home. Another example was after the third workshop when the teachers were displaying some performance deficits that, if not addressed at the beginning of the process, could compromise the attainment of the research goal. The researcher decided to interrupt the implementation as originally planned to implement a reality testing experience to improve performance and continue with the original plan. The result of this redirection was positive and ensured active participation and higher level of commitment from participants.

Theoretical focus.

Both the design of the intervention and the changes during implementation were anchored in the theories which oriented the research process. The formative and design experiments guidelines informed how to manage changes and still pursue the research goals. The learned helplessness theory helped understanding of behaviors patterns which could undermine participants' performance, responsibility for results, and the concept of commitment. The self-efficacy theory informed what the participants' desired state was and what sources of information they could use to form a new sense of instructional efficacy. The metacognition theory was used to operationalize changes in participants' thinking patterns. When necessary, as in the case of the creation of a reality testing framework, the researcher reached out to these theories in order to understand and address the issues as they emerged during implementation. This guaranteed that the changes had positive consequences to the progress of the intervention; they contributed to diminish or eliminate risks to the achievement of the research goal.

Transformational nature.

The transformations sought in this study were achieved. Pre- and post-tests indicated statistically significant decrease in learned helplessness, increase in personal and general teacher efficacy, and increase in metacognition. As well as the quantitative results, which showed impact on participants' levels of optimism, instructional efficacy and metacognitive abilities, qualitative data showed signs of transformation in teachers' beliefs about their capacity to teach, in their instructional practices, and in the environment. In pre- and post-interviews, teachers declared that they believed that participation in the workshops improved their teaching and generated positive impact on some students' attitudes, behaviors, and learning. For example, Selene stated that participating in the workshops changed her focus: "…now that I have seen these things about learned helplessness, I learned how to have - perhaps - a more efficient eye - more focused on the student - It has awaken that in me…". Fabiana describes how the new lesson plan including the MUSIC model of motivation (Jones, 2009) helped her raise the interest of her students: "I got those letters, MUSIC, to plan the lesson and we saw that that helps (pause) - helps students' interest, increases participation, so as they can learn better - they can have better achievements with respect to discipline and everything we teach them."

Validity of the study.

The congruence observed through the triangulation of quantitative and qualitative results demonstrated the consistency of processes across the research phases contributing to the ecological validity of the study. As to consequential validity, the data showed that the changes made had positive consequences related to the implementation of the intervention and generated a positive impact on the participants' ability to practice fact-based reflection. Moreover, changes

were planned, monitored, and controlled in accordance with the theories that oriented the research process. The formative and design experiment methodology guided the change process (Reinking & Bradley, 1988). Learned helplessness and self-efficacy informed the perception of performance discrepancy, and metacognition informed the identification of the discrepancy gap and the reality testing process. After each workshop, the researcher completed a journal in which she registered: (a) what happened during the workshop; (b) what events enhanced or undermined the pursuit of the research goal; (c) possible response actions; and (d) possible threats which needed to be countered. The information collected after each workshop was used to orient changes. Thus, based upon the processes used to control the decision-making during implementation, it is safe to say that there was strong consequential validity in this study.

As to external validity, formative and design experiments are designed to seek solutions to an objective problem affecting a specific population at a specific point in time. However, due to the similarity of the characteristics present in most Brazilian Schools of Tomorrow, it is possible that the results of this study can be generalized to other similar contexts as well. The methodology presupposes adaptations to the current realities within school environments; therefore, this study design could be used within similar contexts with appropriate adjustments.

Member Check.

The initial and final categories derived from the interviews were translated into Portuguese and sent via email for the research team members to examine. The purpose was to make sure the researcher's understandings represented what the participants really meant. None of the participants attended the request in time for their comments to be inserted in the final document. This was somewhat expected because during the implementation process, most participants stated having problems with technology mediated communications. So, during the

implementation of the intervention, the researcher used the pedagogical coordinator's knowledge and experience to clarify, confirm, or disconfirm pieces of information which the researcher was uncertain about before the information became research data. The pedagogical coordinator had worked at the same school for 12 years and she attended all of the workshops in this study.

Limitations of the study.

The limitations of the study were as follows:

- The eight-week timeframe of the implementation phase was too short to implement, monitor, and evaluate the effectiveness of the intervention. A study of a semester or a year would have been better;
- The research was conducted in a foreign country. The interviews needed to be translated into English before being coded and some of the meanings could have been lost in translation. Limited time and lack of resources prevented the process of back translation;
- The researcher worked directly with the participants for eight consecutive weeks. This may have caused a social desirability effect. The participants may have told the researcher what she wanted to hear. Evidence of this effect is the number of 100% scores in the final evaluation survey. What compensated for that effect was the fact that during the workshops and the interviews, teachers gave real classroom examples of the use of the theories and how they perceived the results of their efforts. Then, the researcher could distinguish between the participants' real understandings, the appropriateness of the application of the theories, and the participants' desires to present positive results. Another factor which distinguishes between desire to please and real results of the intervention was that the quantitative data confirmed the qualitative data. So, with regard to the psychometric tests, it was more difficult for participants to "fake" answers in the

quantitative questionnaires than in the oral participation because some tests, such as the learned helplessness test, had a rather sophisticated design and required several calculations to reach each participant's score. The complexity of the questionnaires made it rather difficult for participants to manipulate results. However, at least in the surveys that depicted participants' reactions to the lesson plan and to workshops, the amount of 100% agreement with the survey items raises a yellow flag as to the accuracy of the results.

Chapter 6: Discussion

This chapter represents phase six of this formative and design experiment, finalizing the research. It presents a discussion of findings with regard to how the findings addressed the research questions, how they relate to the existing literature, how they can contribute to teaching and learning, and provides recommendations for further research.

How Findings Related to the Research Questions

The questions which guided this study were as follows.

Primary Question:

How does participation in collaborative professional development workshops on learned helplessness, self-efficacy, and metacognition impact teachers' perceived efficacy with regard to their capacity to address students' helplessness? The three secondary questions also addressed were:

a. What are teachers' beliefs about their own capacity to mitigate learned helplessness before and after the intervention?
b. What are participating teachers' perceptions of impact of the implementation of a lesson plan, including the Nine Events of Instruction (Gagné, 1985), the MUSIC Model of Motivation (Jones, 2009) and metacognitive regulation strategies (Schraw, 1998)?
c. From the beginning to the end of the implementation of the study, will there be a pre/post-test difference in teachers' scores on measures of (a) learned helplessness, (b) instructional efficacy, and (c) metacognition?

Based upon both the qualitative and quantitative data, participation in the professional development workshops on learned helplessness, self-efficacy, and metacognition had a positive impact on the teachers' beliefs about their capacity to use their pedagogical practices to address student helplessness. Pre- and post-test results from paired *t*-tests revealed statistically significant differences on participants' levels of optimism, instructional efficacy, and metacognitive abilities as a result of their participation in the workshops. Qualitative data confirmed the quantitative results. The most recurring impact perceived by the focus team teachers were generated by the reflections about practice that occurred throughout the intervention.

At least some teachers demonstrated confidence in the application of the knowledge, skills, and tools developed during the workshops. They reported that they were able to identify signs of helplessness and address them in their classrooms. Some teachers started to work differently with their students. For instance, these phrases were said by Juliana, an elementary school teacher at different stages of the implementation of this study:

Initial interview: "I do not know any of these theories;"

During the workshops: "I believe we do have learned helplessness cases in our school, because as you know, we work with marginalized children by their own families. They are told that they are not capable of learning."

Final interview:

> I started to identify some cases … There is this new fifth grade student. Every time I asked him to accomplish some task that he did not understand, he became really desperate but I did not understand it that way. He would lower his head and make faces like he was in physical pain. He complained about headache, stomachache, sometimes he said he could not see well. I always sent him to the nurse. But I realized that that happened more often when he was requested to produce something, when he had to write something … I think he had a specific kind of helplessness, he didn't feel capable of doing the tasks so he avoided them. The moment I could identify what was going on, I could address it by working in a different way. I tried to find things in which he could succeed and the incidence

> of headache and stomachache diminished. He started to feel more confident. I started to praise his efforts and now he tries harder until he gets it done" (Juliana).

In response to the primary question and secondary questions (a) and (c), data showed that teachers changed from a state of not knowing what learned helplessness was to a state where they could identify and address learned helplessness in their classrooms by using their own teaching methods. Thus, participation in the workshops about learned helplessness, self-efficacy, and metacognition increased teachers' beliefs in their capacity to address student helplessness.

These findings indicate that teachers' perceptions about their teaching efficacy were correct. At the beginning of the research implementation, teachers perceived themselves as personally efficacious and capable of teaching in other environments. But, they did not believe they could teach in this school due to the specific characteristics of the school's demographics. Results have shown that teachers did have the capacity to teach; however, they needed to be able to understand their students, the environment, and apply effective methods to address the specific issues affecting the teaching and learning processes in that particular school. The simple fact that teachers could understand one of the dynamics, learned helplessness, and address it, made them perceive the impact of their practices on the student.

Teachers in this study asked for more context-specific training; however, rather than top-down training sent by the school board, teachers need to study more to become autonomous and reflective professionals. They need to be part of the design, implementation, and evaluation of context-specific interventions because they know the reality of the environment better than any external program specialist.

A study conducted in California showed that teachers who tended to blame students for low achievements did not have masters' or doctorate degree (Thompson, 2004). Teachers in the same California school, who did not blame the students for failure, had either masters or

doctorate degree. These findings find echo in Skinners' (1954) affirmation that teaching is partly art and partly science. The personal characteristics of the teacher are essential for the art of teaching; however, if the practice is not rooted in solid knowledge of learning sciences, the practice, regardless of the talents of the teacher, may not be effective.

With regard to secondary question (b), "What are participating teachers' perceptions of impact of the implementation of a lesson plan, including the nine events of instruction, the MUSIC Model of Motivation and metacognitive regulation strategies on the student?" teachers reported the impact of informing students the objective of the lesson. This informed students about the usefulness of what they were learning and produced an increased interest in class activities. This was especially relevant for this school's context. In the initial interviews, teachers attributed low achievements to the students' behaviors and lack of interest in school activities, and lack of perception of the relevance of education. However, after the implementation a teacher said:

> When you call them to participate and make them interested, automatically, the discipline, with regard to behavior, is completely different. They are interested; so they try harder to pay attention. They are less disruptive, create fewer problems, and we can teach better. And with that, raising their interest, the results at the time of the assessment are also better (Fabiana).

The students' positive reactions to the ***usefulness*** of the class content, as acknowledged by the teachers in this study, indicated that best teaching practices can be an effective way to change students' behaviors and attitudes. The lesson learned was that teachers needed to utilize diverse teaching methods and make the class content relevant to the students.

The combination of the Gagné's (1985) Nine Events of Instruction associated with Jones's (2009) MUSIC Model of Motivation strengthened each other. After the creation of the lesson plan template, teachers completed a survey in which they demonstrated their approval of

the lesson plan, their beliefs about the feasibility of using the lesson plan, and their expectations of impact of the utilization of the lesson plan on their teaching and learning. Of all participating teachers, 94% believed that if they used this lesson plan their students would learn better. The discussion that followed the analysis of the results of the survey indicated that teachers had perceived that: (a) utilization of the nine events and the cognitive information theory would guarantee they could follow the trajectory of the information in the students' brains; (b) if teachers applied the systematic step-by-step process of the events of instruction they would provide the students with more opportunities to succeed; (c) by using the events of instruction, the elements of the MUSIC Model of Academic Motivation would be naturally implemented; and (d) the events of instruction and the MUSIC Model of Academic Motivation indicated similar practice.

Teachers' perception of the effectiveness of the systematic procedures prescribed by Gagné (1985), through the events of instruction operationalized in the lesson plan, is congruent with the conclusions found in Clark et al. (2012). After extensive research, Clark et al. (2012) stated that guided learning is more effective than other constructive methods that utilize discovery learning. These recommendations are especially relevant for lower grade levels, students with learning difficulties, and situations where students are learning *new* knowledge or developing *new* skills.

How Findings Relate to the Assumptions of the Study

Assumption 1: Public school students in low SES neighborhoods in Rio de Janeiro displaying low achievements and lack of interest in academic activities may have been affected by learned helplessness.

Metacognitive intervention for the alleviation of learned helplessness

This study did not involve students; however, after studying the generative conditions of learned helplessness, the characteristics of helpless individuals, and signs of helpless behaviors in the classroom, teachers could identify cases of helplessness and address the problems in their classrooms. Some participating teachers reported using their new theoretical knowledge to identify students' helpless behaviors and changed the way they worked with these students, and implemented strategies to increase the students' confidence in their capacity to learn. After three weeks, they observed impact on the students' attitudes, behaviors, and learning outcomes. Fincham and Hokoda (1989), state that teachers are in the best position to identify student helplessness and their assessment is usually as accurate as the application of psychometric tests. Teachers spend prolonged time with students and observe them during activities which involve cognitive, motivational, and emotional states. By observing students behaviors and asking simple questions the teacher can identify students' attributional styles and their attitudes towards future outcomes.

Data from a study conducted in a similar environment in São Paulo in 1990 showed that there were signs of learned helplessness among low SES and low achieving third-grade public school girls (Nunes, 1990). Thus, the perception of the teachers participating in this study with regard to the presence of learned helplessness in a school was not the first one in Brazil. More studies are necessary to investigate the existence of learned helplessness in similar environments nationwide and may help the design of effective interventions to address the problem.

Assumption 2: Teachers in low achieving schools in low SES neighborhoods in Rio de Janeiro may also be affected by learned helplessness.

The triangulation of quantitative and qualitative data shows that, despite not scoring on the lowest end of the helplessness scale, there were strong indications that the teachers in this

school were affected by learned helplessness: Administrators articulated the belief that teachers' attitudes towards their capacity to teach underachieving low SES students in schools with high indices of violence may have affected teachers' motivation to teach. The perception is that the middle school teachers were more affected by the negative influences of the environment than the elementary school teachers. Teachers believed that, as children grow in age, they also become more undisciplined. Bandura (1997) concurs that low academic efficacy is especially dangerous for older students who tend to develop "aggressive, and transgressive behaviors. The negative impact of perceived cognitive inefficacy on the course of social development becomes stronger as children grow older and gravitate to peer groups that can get them into all kinds of trouble" (Bandura, 1997, p. 176). Administrators described teachers as effortful but inefficacious: "How can I describe the teachers? …Individually, they try to do a good quality work … I think they do it, but I think they are not efficacious enough" (Tamires)."

Related, some teachers described themselves as helpless. Others demonstrated these deficits when they spoke about their incapacity to teach their current students. Some of them cried after classes, and demonstrated unwillingness to come to work on Mondays to start a new week. One of the teachers said:

> I have heard a lot of colleagues say that to come to work, they need to take a sleeping pill on Sunday to be able to sleep and come to work on Monday - So big is the anxiety they feel. They spend the night awaken thinking about how they are going to get here -praying for the hours to go by - This is horrible - It is very bad (Selene).

Pre- and post-tests on learned helplessness showed that participating teachers were on the "at-risk" interval of the helplessness continuum. They did not score on the helpless continuum but their optimism level was below average. In a range from 18 to -18, the group

score was 2.6. (Seligman, 2006) cautions that the individual does not need to be highly helpless to display performance deficits in times of distress. He states that:

> If your pessimism score (helplessness indicator) is in the average range it will not be a problem in ordinary times. But in crisis, in the hard times life deals us all, you will likely pay an unnecessary price…You will become very sad. The zest will go out of living. It will be very hard for you to get started on anything challenging. The future will look bleak to you. And you will be likely to feel this way for weeks or even months…If you have an average degree of pessimism, you are going through life at a level somewhat lower than your talents would otherwise permit you…even an average degree of pessimism drags down your performance in school, on the job, and in sports. This is true of physical health as well. You will likely suffer the chronic diseases of aging earlier and more severely than necessary. Your immune system may not work as well as it should; you will probably suffer more infectious diseases and recuperate more slowly (p. 53).

Seligman's (2006) statements are congruent with the teachers' behaviors. Despite the "not-so-negative" quantitative scores, teachers identified themselves as helpless: "I consider myself suffering from the same syndrome. I think I am living a moment of great helplessness" (Selene).

Interviews with participants and field notes registered signs of personalization, overgeneralization, catastrophization, and rumination among teachers and staff. But these signs were more evident and more frequent among the professionals who dealt directly with the students: teachers and inspectors. Teachers spent most of their break in the teacher's room where they were busy marking exercises, completing attendance, or doing other school-related chores. When teachers engaged in small talk, the tendency was to complain about the hardships of the job. The most recurring topics were as follows.

- the impossibility to teach well when some specific students were in class: "When the real bad students are suspended, like J., or W., I can teach better, but when they are in class they make the class impossible" (Adriana);

- troubles which they experienced during a class: “He went into the classrooms, with the teachers inside, teaching, and just pulled the other students out of the classroom. If they did not come out, he and his companions would hit them” (Adriana);
- how tired they felt: “I like the research very much -it is a pity that I am not devoting myself entirely - I have been very tired” (Joelma); and
- how the classes were so physically demanding. They reported several problems with their vocal cords. Some teachers used a microphone to teach because they needed to speak louder than the students during classes. One participating teacher was on medical leave for a few days during the research due to problems with her vocal cords: “I lost my voice.”

Teachers’ statements were almost always followed by an emotional remark such as, “this is so sad,” “I don’t know what will happen next,” “there is no way,” “this is devastating,” and “I don’t know what we can do to help these students.” Signs of rumination were perceived when teachers always referred to bad events which happened in the past to add to the difficulties of the present. Melby (1995) found that low efficacious teachers have a tendency to concentrate conversation on the negative aspects of teaching. They have self-doubts about their capacity to implement effective classroom management strategies. The following quotes contain examples of overgeneralization and catastrophization:

> …I was writing on the board the steps of the task and suddenly two students started to punch and kick each other I had to intervene, myself and the inspector … This kind of thing happens with a certain frequency here is this school. This jeopardizes ***any kind*** of pedagogical work. ***The pedagogical work is jeopardized by the discipline problems***. ***Nobody*** can teach in this situation (Arthur).

Before the first workshop, a middle school teacher said, “This year is worse than last year.” The pedagogical coordinator replied: “How can you say this year is worse than last year?

This is the first week of the school year. This is not a positive attitude. If you say this now, what will happen in October, November when you will be really tired?" (field notes). Examples of personalization as demonstrated in the following quote were also very common.

> …they start an argument with one another - they make paper airplanes with the copies I bring them, or the sheet falls on the floor and students step on them "unwillingly" - *but I know they do that on purpose* - t*hey look at me and make those blank faces just to see my reaction* - and - *I am good for them - I am the teacher who defends them* the most - I have to say sit down, stay quiet, shut up this is important for you - *Please, let me teach this*- h*ow can they do this to me?* - they pretend they are not even listening (Adriana).

After one of the fights in a classroom, one of the school personnel said to the researcher: "Sorry, teacher, you can write this in your notebook there - these are not children - these are not students - these are animals (bichos) - *nobody* can control them - there is *no way* - we just put out fires here." His face was pale, his voice was trembling, his eyes were fixed in the air, and his head was shaking uncontrollably. A teacher standing by her classroom door, hearing him, said: "This was a happy young man when he started to work here, look at him now. Then she turned to him and said: "You need to quit this job before you have a heart attack" (field notes). The word "bichos" meaning beast-like or animals was used a few times by different school personnel to refer to the most disruptive students. Combining insights from the literature with the analysis of the data, it is safe to affirm that the whole community in this school, and not only teachers, are affected by learned helplessness. Therefore, interventions for the alleviation of learned helplessness in such an environment should involve all school personnel.

Assumption 3: Increased instructional efficacy would result in a decrease in teachers' helpless beliefs with regard to their capacity to teach that specific population.

This assumption was confirmed by both quantitative and qualitative data. Pre- and post-tests indicated a statistically significant difference in instructional efficacy and helplessness. The

groups' average of optimism evolved from the "at-risk" to the "fairly optimist" range. According to Seligman (2006), higher levels of optimism imply greater resistance to helplessness in challenging situations.

Assumption 4: Metacognition can be an effective tool for the alleviation of learned helplessness in the classroom.

Both qualitative and quantitative data indicate that the metacognitive component of the intervention had a positive impact on the teachers' perceptions of their capacity to use their instructional practices to address students' helplessness. After the intervention, teachers demonstrated an increase in their capacity to exercise fact-based reflections, which was essential for a more accurate appraisal of their practices. In the final interviews all focus team teachers stated that the self-reflections and self-evaluations undertaken during the workshops had an impact on their practices: "for me, I liked the reflections … we could make a self-evaluation and most of the times we are focusing on the student and we sometimes need to reflect about ourselves - about our practice" (Jozi).

Quantitative data confirmed that there was an *increase* in the participants' metacognitive abilities, an *increase* in instructional efficacy, and a *decrease* in helplessness. Therefore, one conclusion from this study is that metacognition is, indeed, an effective tool for the alleviation of learned helplessness. This conclusion finds support in the literature. Research indicates that metacognitive practices foster the accuracy of self-reflections and self-evaluations in such a way that the individual becomes aware of his thoughts (Brown & Campione, 1978; Cullen, 1985; Reeve and Brown, 1984), which prevents maladaptive attributions and inaccurate interpretations of reality (Peterson et al., 1993; Sahoo, 2002). Metacognitive knowledge provides better understandings of the mental processes which generate emotions and behaviors (Flavell, 1979;

Tarricone, 2011). Metacognitive regulation provides the mind tools necessary to monitor and control cognitions. Perception of control is essential for effective human functioning (Schwarzer, 1992).

Assumption 5: By equipping teachers to understand why students may be behaving in a helpless way, and by providing specific strategies to address the problem, teachers may feel more confident in the effectiveness of their teaching practices. If teachers believe that they have the knowledge, skills, and tools to teach a specific population, they will demonstrate increased GTE and start teaching effectively, despite the environment.

Pre- and post-tests on instructional efficacy showed that participants' GTE means were higher than PTE. In a continuum from 5 to 30, the pre-test mean was 17.43 for PTE and 10.06 for GTE. Post-test mean was 20.43 for PTE and 12.68 for GTE. Participants' GTE increased more than PTE. In percent, from pre- to post-test PTE scores increased 17.2 % whereas GTE improved 26%. Bandura (1978, 1997) warns that efficacy cannot be increased by wishful thinking. Efficacy can only be enhanced with concrete evidences of competence. The individual must believe that he has the necessary conditions to succeed, whether these conditions are internal or external. So, congruently with the findings of Thompson et al. (2004), to increase general instructional efficacy, teachers need to believe that they have been equipped to deal with the specific conditions of the school in which they teach. This study provided teachers with theoretical understandings of the phenomenon of learned helplessness and practical strategies to use to address helplessness. The teachers in this study started by complaining that the training they had received so far had been too theoretical. From their perspectives, they needed practical strategies to deal with the school's demographics. However, at the end of this study, teachers

demonstrated cognizance of the importance of understanding the theory behind their practice. Reflective practice requires knowledge, not only the convincement of the need to be reflective.

How Findings Relate to the Literature

The importance of understanding the theoretical background for practice.

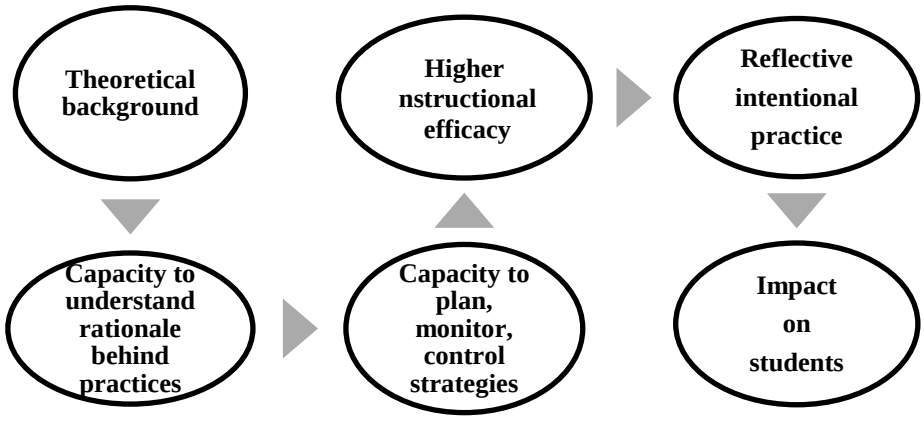
Previous studies demonstrated that teacher's instructional efficacy can be enhanced through the development of solid theoretical knowledge of subject matter content and teaching strategies (Swackhamer, 2009; Tschannen-Moran et al., 1998; Tschannen-Moran & McMaster, 2009). However, a common theme in the initial interviews with the participants of this study was the complaint that the trainings they had received before from the school board were too theoretical. They needed practical strategies for classroom use. They did not demonstrate doubts about their capacity with regards to their subject matters. So, in their initial perceptions, they did not need to study subject matter content, or teaching and learning theories, which they did not believe they could apply to their practices in the specific context of the school.

This study had a heavy theoretical component to it. The workshops started by presenting four theories that were new to all participants: Learned helplessness, self-efficacy, metacognition, and the MUSIC Model of Academic Motivation. The researcher expected the participants to complain about the theoretical focus of the first three workshops but they never did. First, they recognized the connections between the theories and the conditions of the specific school context; second, they perceived the usefulness of the knowledge and skills they were developing for their practices; and, third, they expected to be able to convert the theories into practical, context-specific strategies for immediate use in their classrooms. In the final interview, most teachers highlighted the importance of knowing the theories behind practices:

> I think the theory is important because I do many cool things but if you ask me to put it on paper (pause) I can't - I can't write about what I do because I lack theoretical background - I have difficulties to make a lesson plan - to write objectives (Pause) - I know what I want to achieve - I look at the exercise that I am going to use and I know what I want my student to learn from it but I don't know how to state an objective or say which strategy I am using (Jozi).

Based on the conclusions shared by focus team participants, their perceptions were that the development of a common theoretical background enhanced teachers' capacity to understand the rationale behind the practice. They could plan, monitor, and evaluate the effectiveness of the specific strategies which they were implementing. They could understand, not only *what* or *how*, but *why* they were doing it. They knew how to assess their actions and the impact of such actions on the student. Belief in their capacity to make pragmatic use of the theories increased teachers' confidence and enhanced motivation to go through with the implementation process (Bandura, 1997; Swackhamer, 2009). Success in controlling the implementation process confirmed teachers' sense of efficacy. They knew they could understand what they were doing to the point that they could, intentionally, redirect the work in order to achieve their instructional goals. Finally, they perceived that reflective and intentional practice could impact the students (Gibson & Dembo, 1984; Tschannen-Moran et al., 1998). The teachers' trajectory is represented in the figure below:

Figure 15. Impact of intervention on teaching and learning



Similarities between this study and Thompson et al. (2004).

Thompson et al. (2004) conducted a study in a low-achieving school in southern California, USA. Their purpose was to identify the characteristics of teachers who had the tendency of blaming students and their families for low achievements. Some of their findings were confirmed by this study. The commonalities between this study and the study conducted in California include:

- teachers who blamed students for failure also blamed their parents and would rather not have more contact with the students' parents;
- teachers who blamed students demonstrated low instructional efficacy;
- teachers in the California study, who were more likely to blame students did not have a graduate degree (masters or doctorate); teachers in the Brazilian study did not have masters' or doctorate degree.
- teachers believed that the students did not succeed academically because they did not want to;
- teachers believed that their fellow teachers were outstanding educators, and that nobody could teach those students;
- teachers believed that students from poor backgrounds did not have the same capacity to learn as other students;
- teachers believed that they made the curriculum relevant to the students' lives and they also believed that all students had strengths and talents, but they did not vary teaching strategies, use multiple resources to improve achievement, and did not allow students to work collaboratively;

- teachers believed that they did not receive appropriate training to work with the populations in their schools; and
- teachers did not feel personally responsible for their student's achievements or deficits.

To address the problem in the California school, Thompson et al. (2004) suggested context-specific professional development designed to increase instructional efficacy and change teachers' attitudes towards their students. The authors predicted that if teachers believed in their capacity to produce success, teachers could be motivated to establish higher expectations for their students, employ more efforts to teach the school specific population, and feel more responsible for the students' achievements. These suggestions are congruent with the perceived needs of the participants in the Brazilian study and suggestions can be generalized to the context of this study, as well. The study conducted in Rio was not a replication of the Californian study. Thompson's (2004) purpose was to identify the profile of the teachers who were more likely to blame students for low achievements. It just happened that the Brazilian study found similarities between the environments, in teachers' beliefs about their capacity to teach in both environments, and the attributions made by the both groups of low achieving teachers.

Teachers attitudes towards the students and their families.

Inefficacious teachers working with low SES and low-achieving students are more likely to blame students and parents for failure (Thompson et al., 2004) and develop negative attitudes towards them (Warren, 2002). More than 80% of the teachers in Rio de Janeiro blame students and their families for low achievements (INEP, 2012).

The teachers in this study demonstrated low general instructional efficacy and followed the same tendency to blame students and their families for low achievements. The tendency to overgeneralize and catastrophize bad working conditions could be implying negative attitudes

towards the students, their families, and the school environment in general. Teachers demonstrated low expectations towards the students' capacity to learn. One participant said, "the difference is that here they (students) have less prior knowledge, you need to use easier language, you can't go too deep into the subjects because they won't understand it" (Tatiana). Another teacher added that: "Do you think it is normal for a child to stay all night awake because of gun fights? … If you stay here until 5PM you see thieves in front of the school, armed. It is constant in these children's lives. They are not normal" (Joelma).

Thinking that the students are not normal, that the hardship of their lives outside the school prevents them from getting interest in schooling, that students come from a history of low achievements, and that disenfranchised children cannot learn as well as other children, is detrimental to the teachers' practices. Bandura (1997) and Gibson and Dembo (1984) concur that teachers with high instructional efficacy believe that, with some extra efforts and appropriate teaching strategies, they can teach even the most difficult students. They believe their teaching methods can compensate for lack of family support and negative community influences. They believe that they can control and adapt their classroom practices to reach the academic needs of every student. Whereas, inefficacious teachers, give up trying to teach when they perceive the conditions of the environment are not conducive to effective functioning. Thus, congruently with the Californian study, changing teachers' attitudes towards their students is essential for improving the quality of education in low-achieving and low SES schools in Rio de Janeiro.

Helplessness and burnout.

The tendency to catastrophize, overgeneralize, and personalize the bad events related to the school environment could be causing teacher's in this school to display signs of emotional and psychological distress analogous to the signs of burnout. Burnout causes emotional

exhaustion, depersonalization, and personal inefficacy (Maslach, 1976; Maslach & Jackson, 1981). Teachers suffering from burnout develop negative attitudes towards their students, the students' families, and the work environment (Pas et al., 2010). They doubt their capacity to impact students' learning (Maslach, Jackson, & Leiter, 1996); and display performance deficits (Huberman, 1993). All of these characteristics attributed to burnout are also described in the learned helplessness literature as symptoms of learned helplessness. Considering that self-efficacy is an opposite state to learned helplessness (Abramson et al., 1978; Bandura 1979; Sahoo, 2002), one can infer that low instructional efficacy, associated with other job-related stressors, over time, can result in burnout; and, if not addressed, over time, burnout may escalate to learned helplessness.

Learned helplessness is more detrimental to human functioning than burnout because it generates flaws in the individual's attributional style (Dweck, 1975; Peterson et al., 1993; Sahoo, 2002). Chronic helplessness is similar to a personality trait that determines how the person will interpret and react to life events. Even manageable situations can be viewed as uncontrollable. Burnout can be alleviated by the suppression of job related stressors, stress management, and coping strategies (Schwarzer & Hallun, 2008). Learned helplessness is more difficult to alleviate. Alleviation requires changes in the individual's attributional style.

The tendency to overgeneralize, catastrophize, and personalize bad events related to the students' behaviors and the school environment without taking into account any positive qualities of the school and the students indicates that the teachers in this study do not attribute bad events to momentary conditions. They have not been able to acknowledge or take ownership of any positive programs implemented by the school board. Thus, the suppression of negative stimuli or introduction of positive stimuli will not be enough for the alleviation of their

helplessness. Peterson et al. (1993) state that helpless individuals attribute uncontrollable status to perfectly controllable situations; the situation of the schools in Rio de Janeiro is more controllable than the teachers perceive it to be. Teachers have autonomy, support, materials, and human resources to control these situations. At the onset, instructional practices in this school were being determined more by perceptions of lack of control than by actual impossibility of control. This attitude was undermining any investments made by the school system to improve school quality and student achievements. Among other realizations, the development of a more realistic appraisal of the reality could show teachers in this school that:

- if they made more use of the instructional technologies available, the novelty effect associated with the methodologies that accompany these technologies, could make the classes more interesting, more enjoyable, and more engaging (Grabe & Grabe, 2007);
- if the students perceived that what they were learning in school was useful and productive, they would be more engaged and display fewer disruptive behaviors (Jones, 2009); and
- if teachers took ownership of the Schools of Tomorrow program and strengthened the bonds with the local community, they could increase parental and societal collaboration and recognition. Bandura (1987) states that efficacious schools take the initiative to include and educate parents on how to better help their children. He adds that efficacious teachers seek more contact with parents, whereas inefficacious teachers avoid contact with parents because they fear exposure of their practices.

However, the teachers may not be aware of the possibilities of exerting control over the current school environment. They may be reacting according to a pattern of helplessness

developed previous to the recent changes implemented by the school board. Sahoo (2002) affirms that helpless individuals develop associational deficiencies and lose the capacity to associate a new stimulus with a new appropriate response. So, regardless of the changes in the environment, they continue to follow a helpless behavioral pattern. Assuming that this could be the case, effective interventions in this school should involve the development of the abilities to make accurate appraisals of the current realities of the schools. Teachers need to be able to recognize the positive conditions of the environment, the opportunities to exert control, and believe that they have the capacity to do so (Diener & Dweck, 1978; Dweck, 1975; Peterson et al., 1993; Sahoo, 2002).

Conclusions

In this study, there was strong evidence that: (a) teachers' low outcome expectancies were generating performance discrepancies in this school; (b) teachers' negative attitudes towards the students, their families, and the environment was undermining their motivation to seek effective teaching methods; (c) the teaching methods that were being used were inappropriate for the demographics of this particular school; and (d) teachers' beliefs in their incapacity to deal with the students' behavioral problems were detrimental to their implementation of effective teaching methods as well as class management strategies. This school had all of the resources that higher achieving schools had but the teachers had chosen not to use them because they did not believe that their teaching could impact students' learning. Teachers' beliefs in the futility of their efforts resulted in lack of motivation to employ best teaching practices.

It was true that there were events in this environment that teachers could not control and which they perceived as objective noncontingencies. Students' lack of preparedness for school

and the negative influences of the environment on their desire to learn were among these noncontingencies. However, what generated helplessness was not the perception of uncontrollability but the attributions which teachers made for the uncontrollability. With regard to teaching and learning, teachers were attributing uncontrollable status to situations that could be controllable with intentional and appropriate teaching methods.

This study demonstrated that change in performance implies change in attitudes. During the implementation of this study teachers engaged in fact-based reflections about their practices. Most teachers stated that the processes of self-evaluation they went through during the workshops helped them develop a more reflective practice. Teachers' performance with regard to their participation in the research changed radically after the reality testing experience in which teachers reflected about their performance, their understanding of commitment and accountability. Some teachers reported a change in their attitudes towards the students. They also reported changes in their students as a consequence of changes in their teaching practices. It may be that similar interventions in school-wide proportions for a longer period of time could be effective in greater changes of teachers' performance and attitudes with positive impact on students' learning and behavior.

Implication of the Study

This study contributes to an important discussion about performance deficits in low achieving schools located in low SES neighborhoods in Rio de Janeiro. The first and foremost implication is the realization that individuals do not perform poorly because they want to.
It is important to approach performance deficit from the perspective that human beings have an "inborn desire for competence" (Skinner, 1995). Several authors state that the inability to perform at desired levels causes cognitive, emotional, and motivational distress (Bandura, 1997;

Peterson et al., 1993; Peterson, Maier & Seligman, 1993; Sahoo, 2002; Seligman, 2006). Porter (1996) warns that, depending on the work environment, performance improvement is a rather sensitive matter and needs to be approached with caution in order not to backfire. Mager and Pipe (1997) state that: "People don't perform as desired for many reasons; for example, (a) They don't know what is expected; (b) they don't have the tools, space, or authority to do what is needed; (c) they don't get feedback about performance quality; (d) they are punished when they do it right; (e) they are rewarded when they do it wrong; (f) they are ignored whether they do it right or wrong; and (g) they don't know how to do it" (p. 3).

Elliot and Gresham (2008) distinguish between two types of performance deficits. The first one, the acquisition deficit, relates to Mager and Pipe's (1997, p. 3) item (g) "they don't know how to do it" (p.3). It happens when individuals lack knowledge of the right way to do something. The second, performance deficit, is when the person knows what is right and knows how to do it, but chooses not to. This is where the other items in Mager and Pipe's list need to be considered. However, at the top of these "reasons" for underperformance, Bandura (1997), Peterson et al. (1993), Schunk and Pajares (2005); and Seligman (2006) remind us that that human motivation, actions, and behaviors are based more on what the individual believes than on what is objectively true. To teach well, teachers need to believe in their capacity to teach (PTE), despite the environment (GTE) (Swackhamer et al., 2009; Tschannen-Moran et al., 1998). Therefore, interventions designed to improve student and teacher achievement, alike, cannot be simplistic or based on myths and blaming games (Forgiarini & Silva, 2007; Oliveira, 2007; Thompson et al., 2004; Warren, 2002). Teachers need to feel responsible for the teaching and learning enterprise; however, they should not be made to feel guilty, either. From this perspective intervention should aim to:

- increase teacher's instructional efficacy with regard to their capacity to teach within the conditions of their schools;
- involve teachers from the initial phases of the design (needs analysis) through the implementation and evaluation of results;
- change teachers attitudes towards their students and their families so that they establish higher expectations for their students and employ more efforts to teaching them;
- show teachers the opportunities they have to contribute to the improvement of quality in the realm of their classrooms, their schools, and the district;
- develop awareness that time spent on studying and planning before practice saves time and efforts during practice, generates more positive results, and prevents stressors associated with underperformance;
- focus on the perception of utility of efforts to raise the awareness that learning is a consequence of teaching; and
- establish standards for practice and hold individuals personally responsible for their performance.

Implications for policy makers and school districts.

As a consequence of the Citizen Constitution of 1988, a law passed by the senate in 1990 granted ample rights to every child and adolescent in Brazil (lei nº 8.069, de 13 de Julho de 1990). The purpose of the law entitled the "Statutes of the child and adolescent" was to ensure that every child had the right to schooling, appropriate housing, food, health care, and protection against any sort of violence that could be practiced against children within and without the family. However, this law has been criticized because it granted rights but did not establish

responsibilities for children and adolescents. Some sectors of the society have blamed this law for the impunity of crimes committed by minors protected by the law. The juvenile court has officers to protect these rights. These officers, as well the department in which they work, are called Conselho Tutelar. They investigate cases of violence or disrespect against children and prosecute offenders according to the law. Some teachers in this study stated that they did not apply strict disciplinary measures in their classrooms because they were afraid that the students would feel disrespected and make a complaint against them to the Conselho Tutelar.

Lately, increasing episodes of violence practiced by children and adolescents against their peers and teachers in and around schools have motivated congresswoman, Maria Aparecida Borghetti to present a bill to the house of representatives (Projeto de Lei n° 267, de 2011). The objective of the bill is to include an amendment to the previous law including the responsibility of school-aged children and adolescents with regard to their own education. The bill explains that the expectation is that this will prevent abusive, disrespectful, disruptive, and violent behaviors practiced by students in the classroom. The author justifies the bill by stating that these behaviors are the reason why the Brazilian education system fails to achieve at the level of developed countries. The purpose of the bill is to ensure that every school age-child and adolescent must abide by the ethics and code of conduct prescribed by the educational institution they attend. Furthermore, they are to respect the moral and intellectual authority of the teacher. Should a child or adolescent fail to behave accordingly, the institution has the right to suspend the student for a determined number of days. In case of recurrence, the judicial system shall apply penalties deemed as appropriate. This bill is now being evaluated by the house in order to be forwarded to the senate for voting.

In light of learned helplessness theory, the existence of this law may give teachers the safety net that they need to expel disruptive students. The law may provide a balance between students' and teachers' rights of referral to the Conselho Tutelar. The law may also impact some borderline disruptive students who may fear consequences for their misbehaviors. However, thinking that a law will bring solutions for student behaviors or student achievement is, at the least, a naive expectation. This bill does not address the passive aggressive or apathetic students, who do not necessarily disrupt the class, but still display low achievement. In most classes observed in this school, disruptive students were the ones who participated actively in class activities. In each class observed in this school, a substantial group of students remained quiet, but nonetheless, inattentive and disengaged. Helpless individuals tend to behave according to a predictable pattern of helplessness (Allport, 1937; Matthews et al., 2003; Peterson et al., 1993).The associational deficiencies caused by helpless deficits prevent the individual perceiving changes in the environment (Sahoo, 2002) even when the stimulus changes. So, supposing that all disruptive students are excluded from the school environment, helpless teachers will find another causal explanation to justify their perceived incapacity to teach.

The learned helplessness theory explains that teachers who make external attributions for failure do not take responsibility for students' outcomes. However, the instructional efficacy theory states that teachers' attitudes have great impact on (a) students' perceptions of the utility of education, (b) students' academic self-efficacy, (c) students' achievements, and (d) the classroom environment. These findings posed a question that is worth exploring: Are students' behaviors generating the failure of the educational system (as suggested in the bill) or is the educational system generating the students' behaviors? Teachers stated that student behaviors got worse as they progressed from elementary to middle school. According to Bandura (1997) it

is true that students' behaviors may become more disruptive as they get older but that only happens when students do not develop a strong sense of academic efficacy. Bandura warns that this is a dangerous trend because these students gravitate around and identify themselves with, peers who can exert negative influences; so, it is safe to conclude that at least some of the students' misbehaviors have been generated by the school's inability to promote students' sense of academic self-efficacy. In this case, the exclusion of students by the application of a law could be unjust since the students' behaviors may have been caused by the inefficacy of the system. Besides, the 1998 constitution established that high quality education was a universal right granted to every child. If the inefficacy of the public system is, in any way, causing student helplessness, the principles of equality and equity are not being achieved. It is essential that policy makers and school systems realize that there is no quick fix for increasing educational quality.

Teachers' discussions led the researcher to conclude that most teachers perceived the programs created by the school board as good, in theory, but inappropriately implemented. They believed that the school board created programs without consulting the teachers and delivered packages for the teachers to implement. However, most teachers did not understand the rationale behind the programs, did not take ownership of them, did not know how to evaluate their effectiveness, did not believe that they could work, did not feel responsible for their success, and were not held accountable for results. They believed solutions should come from within the schools. As a participating teacher stated, everything goes through the teacher. Quality requires good programs and material resources, which have been provided lately, but it also requires that teachers learn how to use such resources, and come to believe that their efforts in using them will produce better learning outcomes in a healthier educational environment.

Implications for teacher education programs.

As indicated by Bandura (1997), Forgiarini and Silva (2007); Schiebe (2010), and Soares (2008), teacher education programs have an important role in the development of instructional efficacy in pre-service teachers. Pre-service teachers' evaluate their preparedness to teach based upon their perceptions of subject matter content knowledge as well as knowledge of teaching strategies associated with the subject matter (Swackhamer et al., 2009; Tschannen-Moran et al., 1998). Awareness of the mission of education and the capacity to promote students' intellectual development helps teachers define their focus. Efficacious teachers balance work to promote the cognitive, psychological, and emotional development of the child (Bandura, 1997, Forgiarini & Silva, 2007; Soares, 2008). Stronger teacher education programs and more attractive career plans for teachers could attract higher achieving individuals to the teaching profession (Schiebe, 2010).

Teachers in this study urged for more practical approaches to teacher education programs. A participant stated that, "what we learn in college is far from the reality of the classroom practice" (Fabiana). Knowing that PTE impacts efficacy expectancies and GTE impacts outcome expectancies (Bandura, 1997; Swackhamer et al., 2009; Tschannen-Moran et al., 1998), the findings of this study indicate that teacher education programs should:

- design courses to intentionally build both the pre-service teachers' PTE and GTE;
- develop the awareness that teaching and learning are correlated and that instructional practices impact students learning outcomes and classroom behaviors;
- balance theoretical studies and practical training;
- focus on effective classroom management strategies taking into account diverse school environments and demographics;

- teach pre-service teachers to be metacognitive and to use metacognition to improve students' internal conditions of learning;
- foster the development of reflective practice based on evidence-based evaluations of performance;
- focus on student-centered practices; and
- develop pre-service teachers' interests in continuing education and scholarship so that they can adapt their practices to unexpected situations and contribute to the improvement of the teaching and learning field.

Implications for the school board program designers and trainers.

This study showed that metacognition is an effective tool for the alleviation of learned helplessness. Given the fact that teachers placed such huge importance on the influences of the environment over teaching and learning, it may be that, besides the control of thoughts, developed through the enhancement of metacognitive abilities, teachers and students also need to develop the ability to control the environment. Gagné (1985) states that there are two conditions that impact learning: internal and external conditions. The internal conditions regard the individual's abilities to understand and manipulate the thought processes that occur during learning in order to maximize achievement. The external conditions of learning regard the instructional enterprise. Gagné's work concurs that stronger internal conditions (superior metacognitive ability) can compensate for influences of external conditions of learning. Swanson (1990) and Schraw (1998) found that individuals who gained higher metacognitive abilities improved achievement, regardless of students' intelligence. Metacognition is, indeed, an important component of student achievement.

However metacognition, as defined by Pintrich (2000), is part of a greater framework entitled as self-regulation (Pintrich, 2004; Schunk, 2005a; Schunk 2005b). Self-regulation is a student-centered taxonomy of learning that encompasses the control of thoughts, motivation, behavior, and conditions of the environment. The role attributed to metacognition within the self-regulation theory, goes beyond that predicted by Gagné (1985). In the self-regulation framework, metacognition is an operational tool that enables students to exert control over their thoughts, their motivation, their behaviors, and the conditions of the environment which can impact learning. So, besides strengthening the internal conditions of learning, metacognitive abilities help individuals exert important control over the external conditions, as well. Pintrich, primary articulator of the theory describes self-regulation as ‘‘an active, constructive process whereby learners set goals for their learning and then attempt to monitor, regulate, and control their cognition, motivation, and behavior, guided and constrained by their goals and the contextual features in the environment’’(Pintrich, 2000, p. 453). Schunk (2005a) states that although self-regulation was developed based upon a solid theoretical base as a comprehensive taxonomy, its applications in school contexts have reached very practical applications at the student level. Student-centered self-regulatory strategies can be easily understood and utilized by grade school students. Self-regulation has been used with success in several learning settings to improve cognitive, motor, and social skills in several countries (Boekaerts, Pintrich, & Zeidner, 2000; Schunk, 20005a; Zimmerman & Schunk, 2001).

Self-regulation is congruent with the humanistic philosophy of education as articulated by Abraham Maslow and Carl Rogers who advocated for a more holistic approach to education with focus on the global development of the individual’s potential (Osmond & Craver, 2008). Self-regulation strategies contribute to the students’ abilities to set meaningful goals, organize

and undertake the necessary actions to achieve their goals, and develop autonomous learning strategies. Self-regulation is also congruent with the concept of Positive Education, which postulates that education should combine skills development with well-being (Seligman, Ernst, Gillham, Reivich, & Linkins, 2009). This trend of education focuses on students' strengths. Positive Education interventions focus on the development of resilience, positive emotions, engagement, and meaningfulness. Studies have shown the success of self-regulation with regard to resilience, engagement, academic self-efficacy, motivation, positive emotions, and deviance from undesirable peers (Gardner, Dishion, & Connell, 2008; Pintrich & DeGroot, 1990; Schunk, 1995, 2005a, b).

Analyzing the programs implemented by the school board in the last two years and the contextual conditions of the school where this research was conducted, the conclusion is that self-regulation theory is aligned with the underlying principles perceived in most of the school board programs. The Ginásio Experimental Carioca (GEC), Ginásio Experimental Olímpico (GEO), and Schools of Tomorrow are holistic programs, whose mission includes the development of the students' full potential so that they can succeed in and beyond the school environment. The Schools of Tomorrow include academic support and after-school workshops which could be used for the development of self-regulatory skills for students. GECs and GEOs have two disciplines that could be used for this purpose. These schools have included study skills (estudo dirigido) and lifelong planning (projeto de vida) as independent compulsory courses for grades 7 to 9. The purpose of these disciplines aligns perfectly with the self-regulation taxonomy of learning. So the findings in this study indicate that the implementation of a self-regulation intervention designed to help teachers and students to self-regulate their thoughts, their

motivation, their behaviors, and some conditions of the environment during learning, can contribute to the improvement of teachers' and students' performances.

Implications for teachers.

The first implications of this study to teachers refer to their capacity to identify learned helplessness, how it changed teachers' practices in this school, and how important the theory was for practice. As stated by Fincham and Hokoda (1989) teachers may be the best people to identify student helplessness. They know the students' cognitive, psychological and emotional states better than anybody else (other than possibly the parents). They spend more time with the students and engage them in activities which can demonstrate their dispositions on a regular basis. The focus team teachers in this study who developed and applied the knowledge, skills, and strategies to address student helplessness reported success in increasing students' interests, changing their attitudes towards classroom activities, and building the capacity to produce more positive results. Teachers changed their view of the students and felt more capable of using their instructional practices to address their students' helplessness. They believed they had learned enough about the theories to identify and address learned helplessness. Having a student behavior checklist (Appendix P) helped teachers make sure they detected deficits related to all three components of learned helplessness (contingency, cognition, and behavior) when identifying signs of learned helplessness in their classrooms. But in order to be able to plan and implement their own strategies, teachers needed to study the theories behind the practice. The theories associated with the practical strategies were essential to building the capacity to implement the strategies.

The second implication for teachers regards the need to watch for defeating thoughts that cause emotional distress, overgeneralization, catastrophization, and rumination (Seligman

(2006). Exercising fact-based reflection helped the teachers participating in this study to self-evaluate, identify performance discrepancies, and provide solutions for improvements. Then, they could evaluate their practice in a more accurate and assertive fashion. Accurate appraisal practice helped teachers develop more realistic expectations for their students, perceive different causal explanations for low achievements, change their attitudes towards their students, and improve instructional practices. Teachers should be watchful of the thoughts they are generating about their practices. To do this, submit thoughts that cause emotional distress to a process of fact-based evaluation (disputation) to verify that the causes attributed to the distress are pertinent and realistic (Seligman, 2006); attribute as many rational explanations as possible for bad events. Optimistic individuals do not attribute permanent and generalized status to bad events; avoid rumination by distracting themselves from fixed ideas or recurrent memories of bad events; avoid placing themselves in the center of bad events; and feel psychologically, emotionally, and even physically better than pessimistic individuals.

The third implication is that students' achievements and behaviors can be impacted by instructional practices. Teachers who started this study feeling hopeless that they could teach the population of this school changed their ideas after a few experiences with the application of the new lesson plan. Students reacted positively to the changes implemented by the focus team teachers in their classes. The new lesson plan was used to systematize practice, to provide step-by-step guidance to facilitate learning. Practice was based upon motivational theories that fostered interest and engagement. Some teachers reported higher students' interest and others reported changes in students' attitudes towards class work and efforts to achieve. Thus, the findings in this study disconfirmed the *myth* that the students are responsible for low achievements and that they do not want to learn. The contrasting *reality* was that instructional

practices impacted students' interests, attitudes, and efforts to succeed. It is up to you as the teacher to choose *myth* or *reality* to plan your performance and explain your students' achievements.

Recommendations for Future Research

Further research is needed to investigate student helplessness and investigate if self-regulation can be an effective method of enhancing teachers' perceptions of their capacity to exert primary control over their environments, motivation, and behaviors, as much as metacognition was able to give them a perception of control of cognitions. Studies involving students are also necessary to identify depths and types of helplessness. The learned helplessness literature indicates that individuals who make internal attributions for failure may develop low self-esteem, suffer from depression, and display apathetic behaviors (Abramson et al., 1978; Peterson, 1993; Sahoo, 2002); whereas, individuals who make external attributions for failure do not develop low self-esteem because they may not feel personally responsible for outcomes. These individuals may develop anger issues towards what they consider to be the causes of their incapacity to succeed and they may display aggressive behaviors (Kerr, 2001). The school in this study had a group of disruptive students and another group of apathetic students. It would be interesting to investigate what attributions the students are making in order to design an intervention that can address both types of helplessness.

Researcher's Final Remarks

Taking the liberty to close this document on a rather personal note, the impression I had when working with the data in this study was that some teachers were "Waiting for Godot". In Beckett's (1953) play entitled "Waiting for Godot" the two main characters spent their time

waiting for Godot. They were not sure whether they had met Godot before, whether they were waiting in the right place, on the right day, or even whether Godot would ever really come. While waiting, the two main characters occupied themselves with vague conversations and meaningless actions such as, repeatedly, taking off and putting on the same shoes. Neither character could articulate any reasons or expectations that justified their waiting.

In the last few years, the schools in the Rio de Janeiro Municipal System have received significantly more resources than ever before. The school board officials and the schools' personnel have implemented several programs with the potential to improve the quality of education. Teachers, in this system, have received a number of incentives to develop their skills, improve scholarship, and contribute to effective changes in the school and district levels. However, some teachers have not perceived themselves as active participants in the recent change processes. Some do not acknowledge the positive stimuli they have received. Others feel overwhelmed with so much novelty. Instead of taking ownership of such programs and projects to improve teaching and learning some teachers have resorted to a defensive attitude of blaming the students for the perceived impossibility to make use of the resources available. If I could summarize my final considerations in one statement, I would say: it is time to stop waiting for Godot. It is time to take personal responsibility. Brazil does not have to be the country of the future anymore. Look around; Godot is already here!

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Appendix A: Participants' Informed Consent

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY
Informed Consent for Participants
in Research Projects Involving Human Subjects

Project Title: Mmetacognitiva intervention for the alleviation of learned helplessness.

Principal investigator: Dr. Mary Alice Barksdale
Co-investigator: Elza H. Soares

I. Purpose of the research:

The purpose of this research is to investigate if participation in collaborative professional development workshops on learned helplessness, self-efficacy, and metacognition, can impact teachers' efficacy with regard to the mitigation of students' helplessness. To do this, a series of seven professional development workshops will be given to all the teachers. During the workshops participants will discuss the three theories (Learned helplessness, self-efficacy, and metacognition) and co-create a metacognitive intervention. All participating teachers may implement the intervention. However, a research focus team containing the pedagogical coordinator, the researcher, and six teachers, drawn from the general group of teachers participating in the workshops, will participate in interviews and evaluate the process of creation of the intervention as well as the implementation. The focus team participants will be self-selected and subject to the approval of the majority of participants. During implementation, focus team teachers and researcher will observe the impact of the intervention in the general dynamics of the class and on the teachers' perceived efficacy with regard to their capacity to address students' helplessness. The observation will not focus any particular student. This study will not involve the students. If, by any chance the teachers are to mention the students during the workshops, interviews, or discussion groups, they shall not identify the students in any way. They will refer to them as "student X, Y, Z". This study does include any questions that will prompt direct reports of individual student's behaviors. After the intervention the research focus team will evaluate all the research process, however none of the participating teachers will be identified with their real names. The expected findings are that the knowledge and skills developed during the workshops and implementation of this study may result in teachers' higher sense of efficacy with regard to their capacity to address students' helplessness**.**

II. Voluntariness:

Participation in this research is totally voluntary. You will not receive any rewards for your participation; likewise there will be no punishment or sanctions of any kind should you decide not to participate. The fact that the research is taking place at your school during work hours does not represent any obligation to participate.

III. Anonymity:

Participation is anonymous. **No** information regarding the participant's identity will be revealed before, during or after the study. The results of the research will **not** be released without permission from the participants.

IV. Right to withdraw:

Participants have the right to withdraw from participating in any activity during the research and may quit the study at any moment without any explanations, retaliations or reprimands.

V. Risks:

This research does not offer any risks for the participants.

VI. Benefits:

Participants will acquire knowledge that may be used in their classroom practice long after the research is done and over, they will have the satisfaction of contributing for the advancement of science in education, and they will receive a letter acknowledging the importance of their participation in the research.

VII. Procedure:

Teachers will participate in collaborative professional development workshops where they will discuss the constructs of interest for the research, create lesson plans including metacognitive activities as part of the intervention in their own classrooms, observe the report their experiences as part of the research. The 90-minute workshops will occur every Wednesday, during the teachers' planning time, for seven consecutive weeks, starting on February 29th, at time to be disclosed by the school administrators by February 10, 2012.

VIII. Doubts and questions about the research:

If participants or any member of the school community has any question or doubt about this research, they can contact the investigator, who will be in the research site during the intervention from February 29th to April 19th. Contact details: e-mail elzahsc@vt.edu. Telephone number: (21) 2462-4200.
In the following section you will state your decision to participate in the workshops or not. Please check the parenthesis after each sentence indicating whether or not you also allow tape-recording of the interviews and/or video-taping of the workshops. In accordance with the anonymity policies, I would like to remind you that participants will not be identified without permission at any time during or after this research and that the audio and video recordings will not be used for professional purpose at any time.

Elza Helena Soares, M.Ed.
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After signing, keep a copy for yourself and turn the signed copy to the researcher, please.
I read the information above and I give my free and voluntary consent to participate in:

a) The research workshops only ……Yes ( ) No ( )
b) Audio recording of the interviews ……..Yes ( ) No ( )
c) Video recordings of the workshops…….Yes ( ) No ( )

Participant's name:_____
Signature_____
Place and date:_____, _____/_____/_____.

Appendix B: Attributional Style Questionnaire

page 1

ATTRIBUTIONAL STYLE QUESTIONNAIRE

Directions:
1) Read each situation and vividly imagine it happening to you.
2) Decide what you believe to be the one major cause of the situation if it happened to you.
3) Write this cause in the blank provided.
4) Answer the four questions about the cause by circling one number per question. Do not circle the words.
5) Go on to the next situation.

SITUATIONS

YOU MEET A FRIEND WHO COMPLIMENTS YOU ON YOUR APPEARANCE.

1. Write down the one major cause: _____

2. Is the cause of your friend's compliment due to something about you or something about other people or circumstances?

   Totally due to other people or circumstances — 1 2 3 4 5 6 7 — Totally due to me

3. In the future, when you are with your friend, will this cause again be present?

   Will never again be present — 1 2 3 4 5 6 7 — Will always be present

4. Is the cause something that just affects interacting with friends, or does it also influence other areas of your life?

   Influences just this particular situation — 1 2 3 4 5 6 7 — Influences all situations in my life

YOU HAVE BEEN LOOKING FOR A JOB UNSUCCESSFULLY FOR SOME TIME.

5. Write down the one major cause: _____

6. Is the cause of your unsuccessful job search due to something about you or something about other people or circumstances?

   Totally due to other people or circumstances — 1 2 3 4 5 6 7 — Totally due to me

7. In the future, when looking for a job, will this cause again be present?

   Will never again be present — 1 2 3 4 5 6 7 — Will always be present

8. Is the cause something that just influences looking for a job, or does it also influence other areas of your life?

   Influences just this particular situation — 1 2 3 4 5 6 7 — Influences all situations in my lifea

YOU BECOME VERY RICH.

9. Write down the one major cause: _____

_____

10. Is the cause of your becoming rich due to something about you or something about other people or circumstances?

Totally due to other people or circumstances	1 2 3 4 5 6 7	Totally due to me

11. In the future, will this cause again be present?

Will never again be present	1 2 3 4 5 6 7	Will always be present

12. Is the cause something that just affects obtaining money, or does it also influence other areas of your life?

Influences just this particular situation	1 2 3 4 5 6 7	Influences all situations in my life

A FRIEND COMES TO YOU WITH A PROBLEM AND YOU DON'T TRY TO HELP HIM/HER.

13. Write down the one major cause: _____

_____

14. Is the cause of your not helping your friend due to something about you or something about other people or circumstances?

Totally due to other people or circumstances	1 2 3 4 5 6 7	Totally due to me

15. In the future, when a friend comes to you with a problem, will this cause again be present?

Will never again be present	1 2 3 4 5 6 7	Will always be present

16. Is the cause something that just affects what happens when a friend comes to you with a problem, or does it also influence other areas of your life?

Influences just this particular situation	1 2 3 4 5 6 7	Influences all situations in my life

YOU GIVE AN IMPORTANT TALK IN FRONT OF A GROUP AND THE AUDIENCE REACTS NEGATIVELY.

17. *Write down the one major cause:* _____

_____

18. *Is the cause of audience's negative reaction due to something about you or something about other people or circumstances?*

Totally due to other people or circumstances	1 2 3 4 5 6 7	*Totally due to me*

19. *In the future when you give talks, will this cause again be present?*

Will never again be present	1 2 3 4 5 6 7	*Will always be present*

20. *Is the cause something that just influences giving talks, or does it also influence other areas of your life?*

Influences just this particular situation	1 2 3 4 5 6 7	*Influences all situations in my life*

YOU DO A PROJECT WHICH IS HIGHLY PRAISED.

21. *Write down the one major cause:* _____

_____

22. *Is the cause of your being praised due to something about you or something about other people or circumstances?*

Totally due to other people or circumstances	1 2 3 4 5 6 7	*Totally due to me*

23. *In the future when you do a project, will this cause again be present?*

Will never again be present	1 2 3 4 5 6 7	*Will always be present*

24. *Is the cause something that just affects doing projects, or does it also influence other areas of your life?*

Influences just this particular situation	1 2 3 4 5 6 7	*Influences all situations in my life*

YOU MEET A FRIEND WHO ACTS HOSTILELY TOWARDS YOU.

25. Write down the one major cause: _____

_____

26. Is the cause of your friend acting hostile due to something about you or something about other people or circumstances?

Totally due to other people or circumstances 1 2 3 4 5 6 7 Totally due to me

27. In the future when interacting with friends, will this cause again be present?

Will never again be present 1 2 3 4 5 6 7 Will always be present

28. Is the cause something that just influences interacting with friends, or does it also influence other areas of your life?

Influences just this particular situation 1 2 3 4 5 6 7 Influences all situations in my life

YOU CAN'T GET ALL THE WORK DONE THAT OTHERS EXPECT OF YOU.

29. Write down the one major cause: _____

_____

30. Is the cause of your not getting the work done due to something about you or something about other people or circumstances?

Totally due to other people or circumstances 1 2 3 4 5 6 7 Totally due to me

31. In the future when doing work that others expect, will this cause again be present?

Will never again be present 1 2 3 4 5 6 7 Will always be present

32. Is the cause something that just affects doing work that others expect of you, or does it also influence other areas of your life?

Influences just this particular situation 1 2 3 4 5 6 7 Influences all situations in my life

YOUR SPOUSE (BOYFRIEND/GIRLFRIEND) HAS BEEN TREATING YOU MORE LOVINGLY.

33. Write down the one major cause: _____

_____

34. Is the cause of your spouse (boyfriend/girlfriend) treating you more lovingly due to something about you or something about other people or circumstances?

Totally due to other people or circumstances 1 2 3 4 5 6 7 Totally due to me

35. In future interactions with your spouse (boyfriend/girlfriend), will this cause again be present?

Will never again be present 1 2 3 4 5 6 7 Will always be present

36. Is the cause something that just affects how your spouse (boyfriend/girlfriend) treats you, or does it also influence other areas of your life?

Influences just this particular situation 1 2 3 4 5 6 7 Influences all situations in my life

YOU APPLY FOR A POSITION THAT YOU WANT VERY BADLY (E.G. IMPORTANT JOB, GRADUATE SCHOOL ADMISSION, ETC.) AND YOU GET IT.

37. Write down the one major cause: _____

_____

38. Is the cause of your getting the position due to something about you or something about other people or circumstances?

Totally due to other people or circumstances 1 2 3 4 5 6 7 Totally due to me

39. In the future when you apply for a position, will this cause again be present?

Will never again be present 1 2 3 4 5 6 7 Will always be present

40. Is the cause something that just influences applying for a position, or does it also influence other areas of your life?

Influences just this particular situation 1 2 3 4 5 6 7 Influences all situations in my life

YOU GO OUT ON A DATE AND IT GOES BADLY.

41. Write down the one major cause: _____

_____

42. Is the cause of the date going badly due to something about you or something about other people or circumstances?

Totally due to other people or circumstances 1 2 3 4 5 6 7 Totally due to me

43. In the future when you are dating, will this cause again be present?

Will never again be present 1 2 3 4 5 6 7 Will always be present

44. Is the cause something that just influences dating, or does it also influence other areas of your life?

Influences just this particular situation 1 2 3 4 5 6 7 Influences all situations in my life

YOU GET A RAISE.

45. Write down the one major cause: _____

_____

46. Is the cause of your getting a raise due to something about you or something about other people or circumstances?

Totally due to other people or circumstances 1 2 3 4 5 6 7 Totally due to me

47. In the future on your job, will this cause again be present?

Will never again be present 1 2 3 4 5 6 7 Will always be present

48. Is the cause something that just affects getting a raise, or does it also influence other areas of your life?

Influences just this particular situation 1 2 3 4 5 6 7 Influences all situations in my life

Appendix C: Teacher Efficacy Scale (TES) – Short Form

Teacher Efficacy Scale (Short Form)*

A number of statements about organizations, people, and teaching are presented below. The purpose is to gather information regarding the actual attitudes of educators concerning these statements. There are no correct or incorrect answers. We are interested only in your frank opinions. Your responses will remain confidential.

INSTRUCTIONS: Please indicate your personal opinion about each statement by circling the appropriate response at the right of each statement.

KEY: 1=Strongly Agree 2=Moderately Agree 3=Agree slightly more than disagree 4=Disagree slightly more than agree 5=Moderately Disagree 6=Strongly Disagree

1.	The amount a student can learn is primarily related to family background.	1 2 3 4 5 6
2.	If students aren't disciplined at home, they aren't likely to accept any discipline.	1 2 3 4 5 6
3.	When I really try, I can get through to most difficult students.	1 2 3 4 5 6
4.	A teacher is very limited in what he/she can achieve because a student's home environment is a large influence on his/her achievement.	1 2 3 4 5 6
5.	If parents would do more for their children, I could do more.	1 2 3 4 5 6
6.	If a student did not remember information I gave in a previous lesson, I would know how to increase his/her retention in the next lesson.	1 2 3 4 5 6
7.	If a student in my class becomes disruptive and noisy, I feel assured that I know some techniques to redirect him/her quickly.	1 2 3 4 5 6
8.	If one of my students couldn't do a class assignment, I would be able to accurately assess whether the assignment was at the correct level of difficulty.	1 2 3 4 5 6
9.	If I really try hard, I can get through to even the most difficult or unmotivated students.	1 2 3 4 5 6
10.	When it comes right down to it, a teacher really can't do much because most of a student's motivation and performance depends on his or her home environment.	1 2 3 4 5 6

*In Hoy, W.K. & Woolfolk, A.E. (1993). Teachers' sense of efficacy and the organizational health of schools. *The Elementary School Journal 93*, 356-372.

Appendix D: Metacognitive Awareness Inventory

MAI – Inventário de consciência metacognitiva

Ao completar este questionário, pense como você aprende, como você lida com as tarefas do dia a dia em geral. Pense que você está aprendendo a desenvolver um site na internet, como investir na bolsa de valores, como fazer tricô, ou como o cérebro dos alunos funciona na hora da aprendizagem. O mais importante é dar respostas totalmente sinceras. Não há certo nem errado. Os resultados serão totalmente confidenciais.

Passe um círculo ao redor do número em cada resposta: 1=Concordo plenamente 2=Concordo moderadamente 3=Concordo um pouco mais do que discordo 4=Discordo mais do que concordo 5=Discordo moderadamente 6=Discordo completamente.

1. Eu sei identificar quando eu entendi direito uma coisa ou não	1 2 3 4 5 6
2. Eu consigo motivar a mim mesmo (a) para aprender quando eu preciso	1 2 3 4 5 6
3. Eu tento usar estratégias que já funcionaram antes	1 2 3 4 5 6
4. Quando eu me deparo com uma tarefa, eu sei o que eu espero aprender através dela	1 2 3 4 5 6
5. Eu aprendo melhor quando já sei um pouquinho sobre aquele assunto	1 2 3 4 5 6
6. Eu faço desenhos ou gráficos para me ajudar a entender quando eu estou estudando	1 2 3 4 5 6
7. Quando eu termino uma tarefa, eu pergunto a mim mesmo (a) se eu aprendi tudo o que eu podia aprender sobre aquele assunto	1 2 3 4 5 6
8. Quando eu estou resolvendo uma situação, eu me pergunto se eu explorei todas as possibilidades de resolução	1 2 3 4 5 6
9. Antes de começar uma tarefa, eu penso sobre o que eu preciso aprender com ela.	1 2 3 4 5 6
10. Quando eu estou aprendendo uma coisa nova, eu pergunto a mim mesmo (a) se eu estou me saindo bem.	1 2 3 4 5 6
11. Eu presto mais atenção no significado e na importância de coisas que são novas para mim	1 2 3 4 5 6
12. Eu aprendo mais quando eu me interesso pela coisa	1 2 3 4 5 6
13. Eu uso aquilo em que eu sou forte para compensar por aquilo em que eu sou fraco	1 2 3 4 5 6
14. Dependendo da situação, eu uso estratégias diferentes para aprender	1 2 3 4 5 6
15. Eu sempre me pergunto se eu estou conseguindo atingir meus objetivos	1 2 3 4 5 6
16. Eu, às vezes, sem querer, me percebo usando uma maneira de estudar muito eficaz automaticamente.	1 2 3 4 5 6
17. Quando eu termino uma tarefa, eu me pergunto se havia uma maneira mais fácil de resolvê-la	1 2 3 4 5 6
18. Eu traço meus objetivos antes de começar uma tarefa	1 2 3 4 5 6

Appendix E: Survey of Participants' Evaluation of the Lesson Plan

Evaluation of the lesson plan containing the Nine Events of Instruction (Gagné, 2005), metacognition (Schraw, 1998), and the MUSIC Model of Motivation (Jones, 2009).

Please, circle the number appropriate number next to each statement below to indicate how much you agree or disagree with each one. Use the following label to guide your choices:

(1) I totally agree; **(2)** I agree partially; **(3)** I agree more than I disagree
(4) I disagree more than I agree; **(5)** I partially disagree; **(6)** I totally disagree

1. I believe the use of this lesson plan is feasible.	1 2 3 4 5 6
2. I believe that the metacognitive elements included in this lesson plan can help students learn better	1 2 3 4 5 6
3. I believe that the use of this lesson plan can help foster a unified pedagogical practice in this school.	1 2 3 4 5 6
4. I believe that if I use this lesson plan my students will learn better	1 2 3 4 5 6
5. I believe that if my colleagues use this lesson plan at the same time as I do, we will be able to improve this school's achievements.	1 2 3 4 5 6
6. I believe all teachers in this school are capable of using this lesson plan to improve the students' learning outcomes.	1 2 3 4 5 6
7. I am going to try this lesson plan.	1 2 3 4 5 6

Appendix F: Final Evaluation of the Workshops by Participants

Evaluation of the Workshops according to the guidelines offered by Lyndon and King (2009). The questions below refer to the professional development workshops that you attended. It is important that you answer these questions as honestly as possible. Please indicate your personal opinion by circling the appropriate response at the right of each statement. Circle **1=Strongly Agree; 2=Moderately Agree; 3=Agree slightly more than disagree; 4=Disagree slightly more than agree; 5=Moderately Disagree; 6=Strongly Disagree.**		
Participants' reactions		
1.	The content was relevant	**1 2 3 4 5 6**
1	The amount of content was appropriate	**1 2 3 4 5 6**
2	The presentations were clear	**1 2 3 4 5 6**
3	I was actively engaged in the workshops	**1 2 3 4 5 6**
Participants' learning As a result of the professional development workshops, I have learned:		
4	What learned helplessness is	**1 2 3 4 5 6**
5	What the learned helplessness signs in the classroom can be	**1 2 3 4 5 6**
6	The implications of student helplessness for learning	**1 2 3 4 5 6**
7	How learned helplessness can be addressed in the classroom	**1 2 3 4 5 6**
8	What self-efficacy is	**1 2 3 4 5 6**
9	How self-efficacy can be enhanced	**1 2 3 4 5 6**
10	The sources of information people use to develop their sense of efficacy	**1 2 3 4 5 6**
11	The implications of high self-efficacy for learning	**1 2 3 4 5 6**
12	What metacognition is	**1 2 3 4 5 6**
13	What the main components of metacognition are	**1 2 3 4 5 6**
14	How I can use metacognitive planning, monitoring and control in the classroom	**1 2 3 4 5 6**
15	How to include metacognition in my lesson plans	**1 2 3 4 5 6**
16	How to check the frequency of helpless behaviors the students are displaying.	**1 2 3 4 5 6**
17	How to better foster positive classroom dynamics.	**1 2 3 4 5 6**
18	How to better help students learn.	**1 2 3 4 5 6**
Organizational support and change		
19	The school administration will support us if we want to continue using metacognitive strategies in our classroom. Scale 1 through 7	**1 2 3 4 5 6**
20	The school administrators will support us, if we decide to continue studying these topics	**1 2 3 4 5 6**
21	The school administration is aware of the relevance of what we have been doing in these workshops.	**1 2 3 4 5 6**
Participants' use of new knowledge and skills.		
22	I have used most of what I learned in the workshops in my instruction.	**1 2 3 4 5 6**
23	I intend to continue using the knowledge and skills we discussed in the workshops in my future instruction in this school	**1 2 3 4 5 6**
24	I intend to use the knowledge and skills we discussed in the workshops in another place.	**1 2 3 4 5 6**

Appendix G: Interview Protocols

Researcher-made interview questions for the focus team teachers

Explain that there are not right or wrong answer to the questions, it is important the answers are as truthful as possible, and that the answers to these questions are totally confidential.

(Although I am asking these questions, which I would like you to answer as honestly as possible, you are free to talk about any other topic at any time. Talk about what ***you*** think is really important for the sake of your practices in this school. You are not here for me, I am here for you. Your ***voicing*** is what matters).

After the initial meeting

1. What has motivated you to participate in this professional development?
2. What are your expectations, needs, interests with regard to this professional development?
3. How familiarized are you with learned helplessness, self-efficacy, and metacognition?
4. What are your beliefs about your capacity to address your students' helplessness at this point?
5. How do you feel about implementing a new strategy in your classroom?

Final Interview

6. How do you perceive your participation in the professional development workshops with regard to your capacity to address your students' helplessness?

7. How do you perceive the impact of participating on the professional development on your students?

8. How do you perceive your participation in the professional development workshops on the general dynamics of your classes?

9. How would you evaluate the overall impact of participating in this professional development? On yourself, on your students, on the faculty, on the school community…?

10. Free comments (whatever the participant wants to say about any subject whatsoever). What would you like to say that you have not said yet, that I have not asked… Anything about any topic…

Appendix H: Authorization Letter from Rio de Janeiro Municipal School Board

PREFEITURA DA CIDADE DO RIO DE JANEIRO
SECRETARIA MUNICIPAL DE EDUCAÇÃO
COORDENADORIA DE EDUCAÇÃO
Rua Afonso Cavalcanti, nº 455 – sala 412 – Bl. 1 – CASS
Cidade Nova – Rio de Janeiro – RJ – CEP: 20211-110
Telefone: (21) 2503-2300 – Correio Eletrônico: cedsmed@rio.rj.gov.br

AUTORIZAÇÃO PARA PESQUISA

Sr (a) Coordenador (a) da E/SUBE/CED/8ªCRE

Autorizamos ELZA HELENA SOARES, aluna do Curso de Doutorado em Design Instrucional e Tecnologia Aplicada à Educação na Universidade Virgínia Tech nos Estados Unidos, a realizar a pesquisa **"TREINAMENTO METACONGNITIVO PARA O ALÍVIO DA DESESPERANÇA APRENDIDA EM AMBIENTE ESCOLAR NO RIO DE JANEIRO/BRASIL"** na Escola Municipal Lima Barreto, da rede Municipal de Ensino, com validade até 2012.

A presente autorização permite aplicação de questionários, porém não compreende a utilização de imagem de profissionais, alunos ou outros membros da comunidade escolar.

A pesquisadora se compromete a respeitar a rotina das escolas e a divulgar os resultados da pesquisa à Coordenadoria de Educação, conforme a Portaria E/DGED Nº 41/2009.

Esta autorização deverá ser entregue na sede da E/CRE.

Rio de Janeiro, 9 de agosto de 2011

Maria Cristina Fatim de Castro
11/100515-4

Appendix I: Virginia Tech IRB Authorization Letter

VirginiaTech

Office of Research Compliance
Institutional Review Board
2000 Kraft Drive, Suite 2000 (0497)
Blacksburg, Virginia 24060
540/231-4606 Fax 540/231-0959
e-mail irb@vt.edu
Website: www.irb.vt.edu

MEMORANDUM

DATE: February 16, 2012

TO: Mary Alice Barksdale, Elza Cruz

FROM: Virginia Tech Institutional Review Board (FWA00000572, expires May 31, 2014)

PROTOCOL TITLE: Metacognitive Intervention for the Alleviation of Learned Helplessness

IRB NUMBER: 12-103

Effective February 15, 2012, the Virginia Tech IRB Chair, Dr. David M. Moore, approved the new protocol for the above-mentioned research protocol.

This approval provides permission to begin the human subject activities outlined in the IRB-approved protocol and supporting documents.

Plans to deviate from the approved protocol and/or supporting documents must be submitted to the IRB as an amendment request and approved by the IRB prior to the implementation of any changes, regardless of how minor, except where necessary to eliminate apparent immediate hazards to the subjects. Report promptly to the IRB any injuries or other unanticipated or adverse events involving risks or harms to human research subjects or others.

All investigators (listed above) are required to comply with the researcher requirements outlined at http://www.irb.vt.edu/pages/responsibilities.htm (please review before the commencement of your research).

PROTOCOL INFORMATION:
Approved as: **Expedited, under 45 CFR 46.110 category(ies) 6, 7**
Protocol Approval Date: **2/15/2012**
Protocol Expiration Date: **2/14/2013**
Continuing Review Due Date*: **1/31/2013**
*Date a Continuing Review application is due to the IRB office if human subject activities covered under this protocol, including data analysis, are to continue beyond the Protocol Expiration Date.

FEDERALLY FUNDED RESEARCH REQUIREMENTS:
Per federally regulations, 45 CFR 46.103(f), the IRB is required to compare all federally funded grant proposals / work statements to the IRB protocol(s) which cover the human research activities included in the proposal / work statement before funds are released. Note that this requirement does not apply to Exempt and Interim IRB protocols, or grants for which VT is not the primary awardee.

The table on the following page indicates whether grant proposals are related to this IRB protocol, and which of the listed proposals, if any, have been compared to this IRB protocol, if required.

Invent the Future

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

An equal opportunity, affirmative action institution

Appendix J: Workshop structure, objectives, sample workshop planning, diary entry and field notes

Note: Scroll down to find: (a) A plan of the structure of the workshops, (b) the objectives of each workshop, (c) sample workshop planning, (d) sample resource used in a workshop, (e) sample the journal entry, and (f) sample field notes

Table 1

Structure that oriented that delivery system

Workshops Structure	
Audience	Elementary and middle school teachers in a public school in Rio de Janeiro, Brazil.
Duration	Total eight workshops with approximately 90 minutes each
Type of instruction	Face-to-face interactions in a traditional classroom setting
Learning Outcomes	Intellectual and cognitive skills
Learning theory	Cognitivist
Teaching strategies	Collaborative group work lead by the researcher. Note: To be consistent with the cognitive information processing theory and comply with the research findings informing that short CPD workshops are more effective when they are well-structured, the workshops will be designed and model Gagné's *Nine Events of Instruction* (Gagné, 1985). Find below a rationale for the choice of the Nine Events of Instruction.
Motivation component	MUSIC model of motivation Note: As self-efficacy is a source of motivation and lack of motivation is one of the helpless deficits that this intervention is attempting to address, it may be instrumental to utilize the MUSIC Model of Academic Motivation (Jones, 2009) in the planning of the workshops. Moreover, lack of interest due to perceived futility of education was detected as prevailing cause of dropout in Rio; the MUSIC Model addresses interest and usefulness, which may help students perceive the utility of instruction.
Overall purpose	Help teachers develop theoretical knowledge and practical strategies on learned helplessness, self-efficacy, and metacognition and investigate how this can impact their beliefs about their capacity to teach the students in this particular school.

Workshops objectives and content according to the initial framework

Workshop 1. Preparation for the implementation

Objectives: (1) IRB compliance form filling; Group decisions of (a) research team members, (b) participants' roles and responsibilities, (c) discussion of the agenda for the next workshops and meetings, (d) tests questionnaires, behavior checklists, interviews, and lesson plans.

Workshop content: Modeling of metacognitive planning before, during, and after a task. Evaluation of achievements according to pre-established goals.

Direct relationship with the theories: Perception of control through active participation in decision making. Attention, focus and action towards an aforethought cognized goal, self-regulation, evaluation of group success.

Strategy: Group discussion: After the objectives are presented (planning), one participant will be responsible for checking the flow of the meeting, the team focus, the development of the agenda within time and scope (monitoring and control) and the summary of the achievements and suggestions of how to star the following workshop (evaluation). At the end the researcher will point out the three metacognitive activity phases modeled in the meeting: Planning, monitoring, and evaluation of accomplishments ("meta"component – bring to consciousness what the group just did).

Elements of the MUSIC model: (1) Empowerment: shared decisions, active participation

Workshop 2. Learned helplessness and self-efficacy

Objectives: Discuss and identify examples of behaviors associated with learned helplessness and self-efficacy in the classroom, the notion of control in the teachers' and students' lives, and how behaviors can impact teaching and learning.

Workshop content: Learned helplessness meanings, components, sources, characteristics, how to identify signs in the classroom, characteristics of individual and collective states. Demonstrate how teachers can use the student behavior checklist to identify signs of cognitive, motivational and

emotional deficits associated with learned helplessness. Teachers will take the checklists, observe one of their classes and fill out the checklist to discuss in the forthcoming class.

Direct relationship with the theories: Awareness that learned helplessness is a syndrome with a developmental pattern that can be reversed. Recognition of self-efficacy as a desirable state in opposition of helplessness. Awareness of the possibility of the impact of pedagogical practice on the students' helpless behaviors.

Strategies: 15-minute presentations followed by participating teachers' discussions and contributions of examples they may have observed in the classroom context. How they thought before and how they think now about the students behaviors in class and how they can use their pedagogical practices to teach in that environment.

Elements of the MUSIC model: (1)**Empowerment:** Participation in discussions, contribution of their own examples. (2) **Usefulness:** Teachers will have opportunities to address situations they face in their classrooms. **Interest:** In previous phases of the research teachers demonstrated the need to address students' motivation.

Workshop 3. Self-efficacy. Overview, sources, academic self-efficacy, instructional self-efficacy, individual and collective self-efficacy, how to enhance self-efficacy, comparison between self-efficacy and learned helplessness, characteristics of efficacious and inefficacious schools (get teachers to compare the schools and make a plan to improve the characteristics of their school that might not be in accordance with the characteristics of efficacious schools in the chart).

Direct relationship with the theories: Awareness of that self-efficacy can be enhanced through opportunities of success, that enhanced self-efficacy implies lower helplessness, that enhanced self-efficacy impacts motivation and actions, teachers actions should aim at increasing opportunities of success, make use of concrete evidences of competence to demonstrate to students that they can perform, and enhance self-efficacy so that students increase motivation to try to perform in future occasions.

Strategies: 15-minute presentations followed by participating teachers' discussions and contributions of examples they may have observed in the classroom context. How they thought before and how

they think now about the students behaviors in class and how they can use their pedagogical practices to teach in that environment. For the comparison of efficacious and inefficacious schools, get teachers to discuss in small groups and bring contributions to the big group).

Workshop 4. Metacognition theory and practice (Thinking about thinking, feeling, and doing. Thinking about how thoughts affect emotions, motivation, actions. Thinking about how to change the thought patterns to impact emotions, motivation, actions for ourselves and others)

Objectives: Identification of (a) the principal components of metacognition, the importance of knowing the thought process and being able to manipulate them; (b) how types of knowledge can help teachers plan their delivery strategies and evaluation of learning according to the subject of their classes (declarative knowledge, procedural knowledge, conditional knowledge; (c) how metacognitive regulation strategies before, during, and after activities (planning, monitoring, and evaluation) can foster more opportunities of success in the student level.

Workshop content: (1) Metacognition with emphasis on the consciousness of the existence of the possibility of control of one's own cognitions; (2) What teachers and students can do to enhance metacognitive skills learning (Examples of teachers' attitudes that can be prompted: Inform objectives, explain the relevance of the subject matter, when, how, why that subject can be useful, make connections with previous knowledge, provide clear instructions for the resolution of problems with examples of good and bad practices, introduce the subjects in an organized, sequential and gradual fashion, create opportunities for controlled and free practice, provide corrective feedback; give students the opportunity of self-correction, make the environment safe and face errors and opportunities to learn). Present the strategies contributed by Schraw (1998) and inform that they will be used later when working with the lesson plans.

Direct connection with the theories: Awareness of the possibility to use their pedagogical practice to enhance students' active participation in their own learning process and that such practice can enhance students' self-efficacy.

Strategy: 15-minute presentations followed by participating teachers' discussions and contributions.

Elements of the MUSIC model: Empowerment. Teachers' active participation in discussions, decision making, creation of research tool.

Workshop 5. Operationalization of the theories. How a lesson plan including the Nine events of Instruction (Gagné, 1995), the elements of the MUSIC Model of Academic Motivation (Jones, 2009) and the metacognitive regulation strategies (Schraw, 1998) can enhance the opportunities of academic success and increase academic efficacy in the students. How the capacity to manipulate one's instructional practices can enhance teachers' perceptions of capacity to teach in this schools' environment.

Objectives: Teachers will use the recently constructed knowledge to create a lesson plan template with the purpose of promoting student success and enhancing students' participation.

Discussions to be prompted by the researcher in case the teachers do not voluntarily engage: how teachers can increase students' awareness of their cognitive processes during learning; The importance of empowering students, trigger their interest, and demonstrate caring (Music Model of motivation); Discuss and possibly create lesson plans that could be shared by all teachers to unify practices in the school.

Workshop content: Lesson Plan Template creation – After discussing the topics above, teachers may contribute a shared lesson plan template that can ideally be used by all teachers. The importance of a common lesson plan is that teachers with different levels of instructional efficacy can feel empowered when using it. Moreover, reported results of the implementation may be less confounding if practices are standardized. The systematization of a common lesson plan is also consistent with Lyndon and King's recommendations for effective short term workshops. Research by Mikulincer, Yinon, and Kabili (2006) found that helpless individuals have a greater need for structure due to the constant fear of failure. Only after individuals feel safer in a given situation does the need for structure diminish and individuals dare to use creativity, innovation, and customization.

Direct relationship with the theories: (1) Having a structured lesson plan template agreed-upon by the team may contribute to the teachers' sense of collective efficacy with regards to the groups' capacity to incorporate metacognition in their practice. (2) Understanding the cognitive process (CIP), having a blue print for addressing students' motivation (MUSIC Model), and having a

framework to conduct their class events (Nine events of instruction) may help teachers increase their sense of instructional efficacy, after all, they may feel like they have been equipped with some effective external tools.

Strategy: Group hands-on-work. One teacher will be responsible for observing the flow of the meeting and the attainment of the objectives. Another teacher will be responsible for identifying the metacognitive processes that took place during the meeting and summarize the achievements of the day.

Elements of the MUSIC model: *(1)* Empowerment: Shared decisions, hands-on work. (2) **Interest/Usefulness/:** The lesson plan template they contributed could have immediate use. (3) **Success:** Teachers had a final product to be shared by the entire group.

Workshop 6. Lesson planning using the new lesson plan.

1. Each teacher will bring their subject matter and plan a class using the new template. Teachers will be invited to reflect upon the following: How they thought before about their capacity to use their instructional practices to bring about learning in this school environment; how they are thinking now; what sorts of outcome expectations they established before and now; how they perceived their motivation to teach in this school before and now; how they felt emotionally before and now.
2. Schedule class observations throughout the week

Objective: Monitor the capacity to operationalize the theories to monitor and evaluate results.

Direct relationship with the theories: Monitoring and evaluation of results based on efforts to produce desired outcomes.

Strategy: Free voluntary contributions, hands-on lesson planning. Make teachers aware that they are expected to apply the metacognitive strategies for planning, monitoring, and evaluation before, during, and after the activity of planning their lesson and they are supposed to include these same strategies before, during, and after the activities they are planning for their students.

Elements of the MUSIC model: (1) **Empowerment.** Shared experiences. **Usefulness:** Discussion of real practices.

Workshop 7: Monitoring and evaluation of implementation of lesson plans in the classroom.

1. Teachers will reflect and share their experiences with the lesson plan.
2. Schedule more class observations.
3. Provide feedback and coaching
4. Schedule final interviews

Direct relationship with the theories: Reflection about, monitoring and evaluation of practices.

Strategy: Group discussions, voluntary participation

Elements of the MUSIC model: (1) **Empowerment**: group sharing. ***(2) Success:*** feedback, coaching for improving performance. ***(c) Caring:*** Class observations and support.

Workshop 8: Final evaluation

Objectives: (1) Evaluation of the workshops. (2) Self-evaluation with regard to the impact of participating in the workshops. (3) Evaluation of possible impact of the inclusion of metacognitive skills training in the classroom on the students' helplessness and self-efficacy. (4) Discussion of possible continuation of application of metacognition in the classroom after the research is over. (5) Collect final questionnaires, surveys, and students' behavior checklists.
Direct relationship with theories: Evaluation of results of collective and individual efforts.

Strategy: Group discussion and active participation of group members.

Elements of the MUSIC model: (1) **Empowerment**: Expression through evaluation of the research process. (2) **Caring:** Opportunity given to each individual to voice their ideas.

Rationale for the choice of the instructional delivery strategies.

In order to be congruent with the cognitive nature of the constructs underlying this research project, I decided to use *Gagné's nine events of instruction* to guide the work during the

workshops. The nine events of instruction is based on the Cognitive Information Processing Theory (Gagné, 2005). They consist of a sequence of steps be used during instruction, in a congruent an consistent way so as teaching can follow the steps that the cognitive information theory identified as representing the trajectory of the information in the human mind. Such events of instruction are intended to mimic the trajectory of the information in the learner's mind, since it hits the person's sensory memory, through the senses, until its final storage in the long-term memory. Depending on the purpose, content, cognitive developmental level of the learners and the teacher's intentions for the instruction not all events are used. More mature students need less structure. Cennamo and Kalk (2005) provide a shorter sequence of six essential events that include gaining learner's attention, accessing prior knowledge, comparing new knowledge to prior schema, empowerment of learners to take action towards the attainment of the desired goals, opportunities to synthesize information and assess progress, and opportunities of transfer (chapter 4). For this study, the nine events may be a better fit because the students that the participating teachers work with are young, low achievers, who operate in low cognitive developmental level for their ages. Thus, they may need more structure.

The nine events are divided into three groups of three events each: The first three are preparatory to learning: gaining attention, informing learners of the objectives, and recalling prior knowledge. They relate to the metacognitive planning on the part of the teacher. The second group of three events is related to the class content itself. The final three deal with assessment, evaluation and transfer. For the sake of the metacognitive training, I will invert the order of the second and third events. Sometimes, I will use the sequence as it is, other times I may go from "Gaining Attention" to the "Recall of Previous Knowledge" and then inform the students of the objectives of the class. Metacognitive skills will be inserted within the events of

instruction. For example, (1) after the participants are informed of the objectives of that workshop, they will be asked to answer a few metacognitive awareness questions. These questions will help them establish a personal goal for the workshop experience, identify their prior knowledge and their knowledge gap. (2) During the development of the workshop, they will be asked to monitor their progress, by self-assessing and monitoring their progress towards their personal goal, compared to the workshop overall goal. (3) at the end of the workshop, participants will be asked to evaluate the process of the workshop, how the content was presented, how they contributed to the teaching process; how they contributed to their own learning, if they have achieved their personal goals, and if they have suggestions for better general outcomes.

Table 2

Summary of the nine events of instruction (first column), connecting each event to the cognitive processes (second column) that happen during learning, making a parallel with their instructional purpose (third column). The information used to create this table can be found in Gagné et al., (2005, pp. 192-207).

Events of instruction	Cognitive learning processes	Instructional use
Gaining attention	Reception of patterns of neural impulses.	Turns on the learner's the learning mode. Directs learner's attention to purpose of instruction. Activates sensory memory (senses)
Informing learner of objectives	Activating the executive control	Sets expectations of performance. Informs learners of what they are supposed to do and how. Informs strategies and evaluation
Recalling previous knowledge	Retrieval of prior knowledge to working memory	Anchors new learning in existing knowledge
Introducing content	Activation of selective perception	Presents new information, procedures, processes… When connected with previous knowledge, content presentation enhances encoding in long-term memory. The new info makes room in a schema that already exists.
Providing guidance	Activation of semantic encoding, search for cues for retrieval	What Vygotsky calls scaffolding. Any strategy that makes learning memorable. Remember that meaningfulness and usefulness enhance interest

		and facilitate long-term memory.
Eliciting learner's performance	Activation of organization for intelligible responses	Empower the students by eliciting responses from them. Let them manipulate the information and try it in different ways to enhance retrieval of what has just been learned.
Providing feedback on performance	Reinforcement	Inform the learners if their performance demonstrates accurate understanding. Show them what is wrong, how it can be right. Model and coach right performance
Assessing performance	Activating retrieval, reinforcement or learning	Assess learner's delayed knowledge to verify if learning is likely to have occurred.
Transfer	Providing cues and strategies for later use	Provide contexts and situations for students to apply what was just learned

Rationale for the choice of the MUSIC Model of motivation for the lesson plan.

The students in the both school settings, with which the participating teachers work, are described as unmotivated and lacking interest in academic affairs, unresponsive to teaching, displaying inappropriate behavior disrespectful behaviors, and low academic achievements. These characteristics are also indicated by the examined literature as possible signs of learned helplessness (Bandura, 1978; Donovan & Leavitt, 1985; Dweck, 1975; Garber & Seligman, 1980; Klein & Seligman, 1976; Peterson et al., 1993, Sahoo, 2002; Willis & Blaney, 1978). Therefore, one can infer that instruction may be more effective if the instructor includes a motivation model within the steps of the Nine Events of Instruction. The MUSIC Model of Academic Motivation can be used in the design of instruction to promote greater engagement of students with their own learning (Jones, 2010).

The model consists of five components that the instructor must strive to include in the class design and development: Empowerment, usefulness, success, interest, and caring. This model seems to be a positive fit for this study because the students in this school are described as unmotivated, lacking interest, and unaware of the usefulness of education. The MUSIC Model of Academic Motivation (Jones, 2009) states that in order to be effective and appealing to the

students, instruction should be able to e**M**power the students; be **U**sefull outside the classroom; provide them with conditions and opportunities to believe in their capacity to **S**ucceed; **I**nterest them personally and/or professionally; and finally, the instructor must show students that he **C**ares about their development (Jones 2010).

Sample of a workshop planning

Workshop 2: Learned Helplessness

Table 3

Sample workshop planning

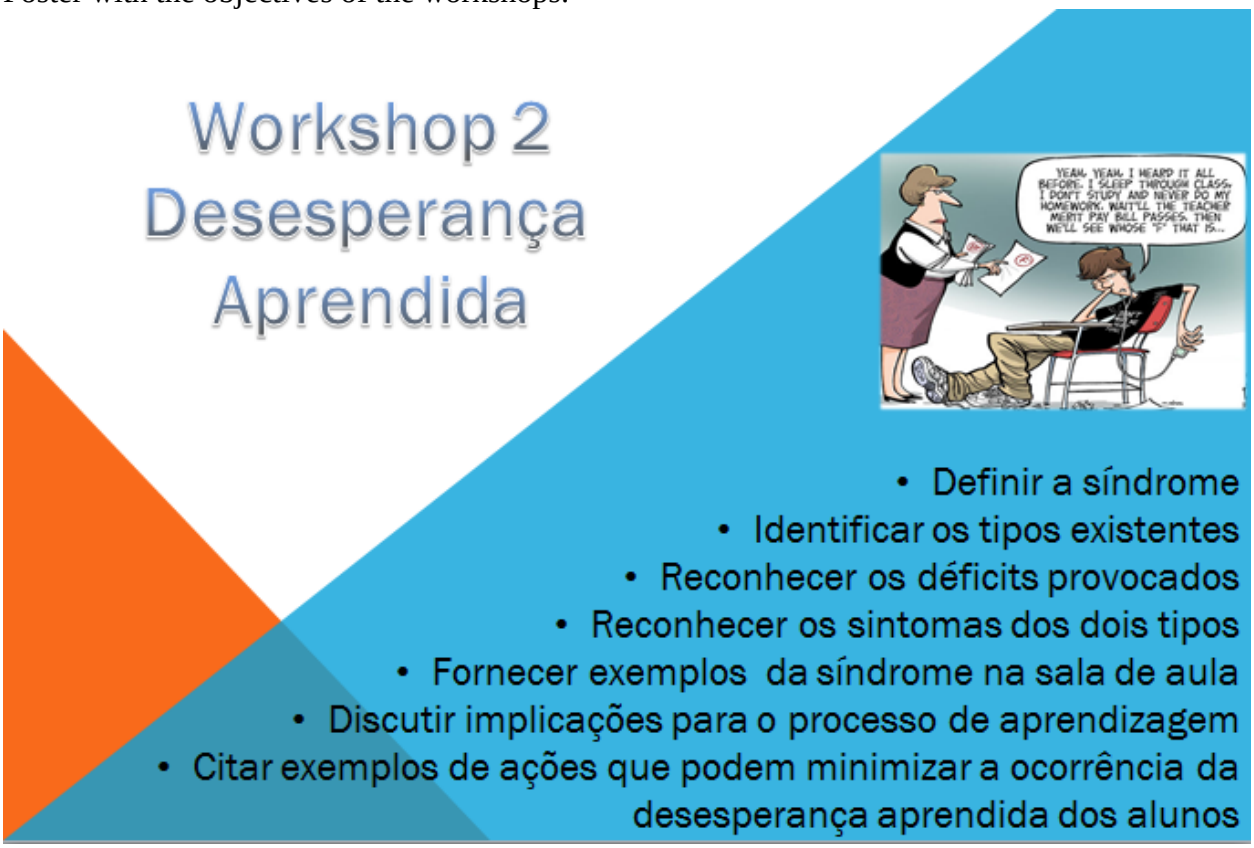
Workshop 2: Learned Helplessness - Overview of the concept				
Objectives	• Given presentation led by the researcher, teachers will be able to (a) identify types, characteristics, deficits and signs of learned helplessness; (b) provide examples of possible learned helplessness indicative signs in the classroom; (c) discuss the implications of learned helplessness in learning; (d) demonstrate that they understand how to use the student behavior checklist in the classroom.			
Data	Field notes from teachers discussions: (Research question 3) How are teachers' beliefs in the capacity of the group to mitigate students' learned helplessness at this point? (Research question 4) How are teachers' beliefs in their own capacity to mitigate learned helplessness at this point?			
Events	**Music Model**	**Description**	**Time**	**Class material**
Gain attention	I	Researcher will display three pictures: A depressed student, a disruptive student and an engaged student.	2 min	Lap, top, Prezi Presentation
Recall of prior knowledge	M, I	Teachers will be prompted to provide examples of apathetic and aggressive behaviors and ask them which behavior they are most prone to the associated with learned helplessness.	3 min	
Inform objectives	All	Researcher informs teachers the agenda of the workshop. For the purpose of modeling metacognition, a printed version of the objectives will be displayed so the teachers can monitor their progress during the presentation. Infrom the teachers of the purpose of displaying the objectives in a visible site.	5 min	Poster with objectives
Present the content	All	Researcher goes through a PPT presentation with the Learned helplessness content.	20 min	Pieces of paper, Pens
		Teachers will discuss their understandings in pairs or small groups and share with the big group. Questions are welcome, but the research will attempt to have other colleagues trying to answer the questions.	15 min	Checklists Poster with metacog. strategies
		Teachers will contribute with their experiences: How the theory relates to their practices and experiences in this school. How the	15 min	

		theories confirm or disconfirm the way they think about their practices, their students, the school environment. Researcher introduces the student behavior checklist and models how teachers can use that list to identify signs of learned helplessness in the classroom. Teachers go through the list in pairs to figure out how they can use it their classrooms. Metacognitive monitoring, before the presentation starts: A printed metacognitive chart will be displayed in the classroom. It will contain before-, during-, and after- activity tip questions. • What do you know about this subject? What don't you know? What do you think you need to know about it? • What do you know about other subjects that can help you learn this content? • What factors could prevent you from learning? • Do you know what you are expected to do? • What is the general goal? What is your goal?	10 min 10 min
Provide Guidance	M S C	During "group, think, and share", researcher will walk around and give clues for self-correction or self-assurance. Metacognitive monitoring during the process: In the middle of the content, researcher will ask participating teachers to monitor their progress by asking themselves a few questions: • How am I doing? • Am I making progress towards the attainment of my goal? • Do I need help? • Do I need to change strategies? My efforts? My attention? My behavior? • What am I learning with this activity?	
Elicit learner's performance		Voluntary participation: Teachers will be asked to write questions about the topics discussed on a piece of paper and put them on the desk. The researcher will randomly select some question (depending on the time left) and ask the other teachers to answer the questions.	
Provide feedback on performance	M, S	Feedback will be given during "group, think, and share" and during the question and answer activity. Metacognitive monitoring and control after the presentation: • Did I achieve my goals? Did I get all the "Need to know" information? • What did I learn about the subject? About myself with this activity? • How will this learning impact my life? • Am I satisfied with my strategies? My participation? My behavior? • What grade do I give myself as a learner?	10 min
Transfer	I M S C	Researcher will ask participating teacher to bring examples of learned helplessness for the next workshop. The examples do not need to be school related. They can be related to consumers' issues, other professionals, the weather, politics, chronicle diseases. The	3 min

		student behavior check lists will also be collected in the following workshop.		
Next Workshop	I	Show them the slide with the gap between helpless and efficacious beliefs of competence and inform them that that gap is going to be the object of our discussion and the ultimate objective of our research efforts.	2 min	Prezi Continued

Materials used in this workshop:

- Prezi Presentation: http://prezi.com/3mm7wriwa4ln/desesperanca-aprendida-workshop-2/.
- Poster with the objectives of the workshops:



- Poster with metacognitive strategies (Planning, monitoring, and evaluation (real size 30 x 36 inches):

Sample journal entry:

What happened:Workshop 2: Learned helplessness.

Events that enhanced the attainment of the research goal: All teachers who completed the consent form attended the workshop. Two new ones showed up but one of them left early.

Teachers seemed to understand the theory. Their comments and contributions were positive and appropriate.

Events that could prevent the attainment of the research goal: Teachers arrived late. Teachers did not engage in voluntary contributions and discussions. They answered direct questions. We did not know which classroom to use until the last minute. The equipment was not ready and we started more than ten minutes late. We did not have the planned amount of time for discussions.

Action? Talk to the coordinator and ask her to define a room for the next workshops. This room should be available early so I can have the equipment ready and start on time.

Threats to the development of the intervention: Too early to say but the teachers failed to return the questionnaires (yellow light).

Sample field notes (Workshop 2, March 7, 2012)

Mar 7, 2012

I arrived at the school early but I could not go to the classroom before the teachers to set up my material because till then nobody knew which room I was going to use. The principal is back from vacations. She is busy. I said hello, she said welcome. That was it.

I stayed in the teachers' room and took the opportunity to talk to the teachers. During the morning break teachers were having lunch and I had lunch with them. Only one teacher had brought her food from home the others were eating the school made food. There were eight teachers in the room.

I provoked the teachers by asking if they were feeling better about the students' behaviors than they were in the previous week. It was like I had lit a fire. Three or four of them started talking about the school. Some teachers were intimidated with my presence and they did not make open comments they just shook their heads and sometimes led the conversation by adding a phrase to what was being said in a way that the other teachers would say what they had wanted to say themselves.

The summary of the conversation was that: In the seventies and early eighties the schools were not in the favelas. The students had to commute from the favelas to another geographical area to go to school. In the 70's and 80's some favelas grew and encamped the areas where the schools were and lots of new schools, especially the ones called Brizolões (schools built in the period of Governor Leonel Brizola) were built in the favelas. The intention was to bring the school closer to the most disadvantaged. The project intended to give the most disadvantaged easier access to schooling, to promote equitable education, and make the people who lived in favelas feel more valued as citizens. Brizola gave property title to the people who lived in invaded areas in the state of Rio, but they still did not have to pay taxes like the rest of the population. When people from poorer states in Brazil, especially the northern states knew that they could come to Rio, receive invade government land and have a property title, there was a demographic explosion in the favelas in Rio. The comments made by the teachers find support in the literature. The 2010

population census conducted by the Brazilian Institute of Geography and Statistics (IBGE) found that only in the last decade the population in the favelas has grown twice as much as the other geographical areas in Rio de Janeiro.

The teachers went on to say that the schools in the favelas are completely different from the other schools. They have very specific characteristics that are overlooked by the policy makers and the school board. These schools should have a different pedagogical proposal.

I asked them about the program Schools of Tomorrow, which was designed by the school board team and put in place for these schools. The teachers said that this program does not work. It has been in place for two years not and the results are none. The parents only take the children to school because they receive money for each children they keep in school (bolsa família program) but they do not value education. The students are forced to be there but they are not forced to behave like students. They do not perceive the utility of education.

I asked the teachers how different it would be if the schools were not in the favelas and they said that when the students had to commute to the schools outside the favelas, they had to leave their safety zone and get into a different environment where they were minority. They had contact with a different environment; they knew that in that environment the behavioral code was different. So, they needed to fit in. The way to fit in was to behave like the other students, to speak, dress, and perform like the other students. They viewed education as the connection between “their world” and “the world out there”. When the favelas grew around the schools or school were deliberately built in the favelas. The students did not have to move from one physical space to another. So, they did not have to change their psychological state either. They remained in the same environment within their comfort zone. They feel like they can control that environment. They are sued to it. In such schools the teachers are the ones who are out of their comfort zone. In order to get to the school to work, teachers have to leave “their world” behind and drive or walk through areas that most of them are afraid of. They have to drive or walk by four, five armed men with machine guns, AR-15, or even bazookas. Teachers do not know whose children they have in their classrooms. Students take pride in being friends with drug dealers. Students who are known to be related to powerful drug dealers are untouchable. They are feared by the other students, by the teachers and school administrators. A teacher said that once he was waiting for his bus near the school and a parent came to talk to him. This parent had three guns under his thin T-shirt. He asked how his son was doing in his subject matter. The teacher said he was doing like the other students. The father said, “he had better pass because I have very short tolerance”. The teacher felt that was a threat. On the other hand the same teacher said that another parent came to the school to ask about his son’s development because he had heard that his son was not doing well. He introduced himself as “the chief” meaning he was the most powerful drug dealer in the area. He told the teacher that he wanted his son to succeed. He did not want his son to be what he was. He wanted his son to have a future. The teacher was honest and told the father that his son was not going the right way, then. Despite the father’s concerns, the son ended up joining the drug dealing and was killed a few years after that.

In these kinds of schools, teachers are afraid to confront a student, to give a student a low grade or fail a student. Teachers do not receive any differentiated training to work in these schools. They have the same pedagogical model, the same curriculum and the same standards.

The teachers also mentioned another important thing: Because they could not deal with the students' reality, teachers focused the work on teaching content. However, it is impossible to teach content when the students do not behave in class, do not respect teachers' authority, do not bring their materials to class, refuse to pay attention, do not do any homework, and refuse to engage in classroom activity. So, teachers choose a minimum to teach to the students that still want to learn and spend the rest of the time trying to keep the students in an acceptable social environment. All of the teachers, though, agreed that it is not all the students who misbehave, it is a minority, maybe four or five in each classroom. However, because they are natural negative leaders, they draw others to them.

I asked about sanctions to bad behavior. They explained to me that there is no consequence to bad behavior. The pedagogical coordinator intervened and said that actually there is but they cannot expel all the students in the school. When a student misbehave they write a note to their parents, the second step is to call the parent, and the third one is to suspend the student. After a few of serious incidents, they can threaten to send the student to another school or expel the student. To which the teachers said, but that does not help. First of all because the parents do not read the students agendas, they do not come to school when they're called, and whenever they come, they do not do anything about it. Some parents say that they have given up the child already.

Another teacher said: Even if we could do that that would be crazy enough to punish a student whose father is the chief of the drug dealers. There are students here in the 6th grade that do cannot read or write. On one side there is the eminent dangers of letting a student fail in you subject matter on the other side there is the school board that blames us, teachers, if a student fails." Teachers complain that the school board always listens to the parents and blame the teachers for the students' bad results. There is way too much paperwork when a student fails. They come after the teacher: "Why didn't you provide extra support? Why didn't you send him homework?" "If I send homework, offer extra support and the student gets rid of it before he gets home, there is no way the parent swill know about it, they can complain to the school board that I did not do my job. All I have is my word and my own notes against the parents' words. The school board will always listen to the parents".

Another teacher said that in many schools they prefer to let the students pass than have the trouble of doing so much paperwork. Teachers end up teaching to the good students, because they recognize that they still have some good students, and let the bad ones on the side. When the students want to sleep at the back of the room, play videogame or talk to each other, the teachers let them be so as they can teach the few students who demonstrate some interest in learning.

Another teacher mentioned good students who succeeded to study in outstanding high schools and public universities after leaving that school.

The room they gave me had two fans and it was fresh enough. White board, overhead projector, broad band internet working. However, the equipment had not been used yet this year although this is the second week of classes after the carnival. So the inspector had problems to turn on the school equipment. I had taken my own portable projector just in case and I used it. I could use

my web-based Prezi as well and that had a positive impact on some teachers. They asked me what software that one was.

Last week I had to give them the questionnaires to fill out at home due to the complications of the first week of classes. 17 teachers were present, 16 agreed to fill out the questionnaire, but only seven returned them today. The other nine did not. I asked them what we should do about it and they asked for another week. They promised to bring the questionnaires next week. I agreed. I don't think that will skew the results. We have not really said anything that can affect the completion of the questionnaires. I asked them if they had read anything or thought about anything that they would like to share with regard to the topic of the research. Nobody had anything to say, so we started off.

The impression I had (biased) was that the moment I left the room the previous week, they shut off their minds to reopen today when they entered the room. They behave like I am their teacher. The pedagogical coordinator keeps repeating that "what Elza has brought for us" is this, that… They call me "professora" all the time. I have asked them to call me Elza, and I have told them that we are doing this together. I have tried to involve them, even though these three first workshops are full of novel information for them and the format is participative lecture. They can interrupt me at any point, ask questions, make comments and suggestions… The problem is that they go off the topic so much and we lose focus and precious time. I will try to make a sharp switch when we start planning the lessons. Maybe then they will bring their contributions more easily and get more engaged.

The greatest difficulty in getting them to talk is that they always go back to repeating every negative thing the students do, the lack of help form the students' families… No matter what we discuss, we always end up in the negative side of the schools' behavioral problems.

I noticed a huge difference between elementary and middle school teachers. Elementary teachers behaved calmly, they were quiet and silent. They only participated if they were prompted to. The middle school teachers were more participant, but they usually make comments to justify a situation or a given behavior.

The elementary teachers like to describe their planning and procedures, the middle school teachers describe the working conditions that do not allow them to function competently.

The day was productive. We managed to do talk about learned helplessness in general and they could identify and illustrate signs of learned helplessness in their classroom. I need to elaborate more on the identification of cognitive deficits. They are mistaking cognitive deficits with "learning difficulties" and not "the perception of disconnect between efforts and outcomes".

I explained the students' behaviors checklist to the teachers and asked them to observe their classes and fill out one of the behavior checklists and bring it back next week.

Note: I realize now why the teachers were making a mistake between cognition and formal learning. One of the most popular Portuguese dictionaries define cognição primeiramente como

aquisição de conhecimento (MUSSEN et al., 1988, p.210). Na verdade aquisição de conhecimento é uma atividade cognitiva. Cognição refere-se ao próprio processo do pensamento e todo o produto deste processamento. Logo o termo cognição tem um significado muito mais abrangente do que o conhecimento geral dos professores com os quais eu estou trabalhando.

Appendix K: Metacognitive Reality Testing Framework

Reality Testing Framework

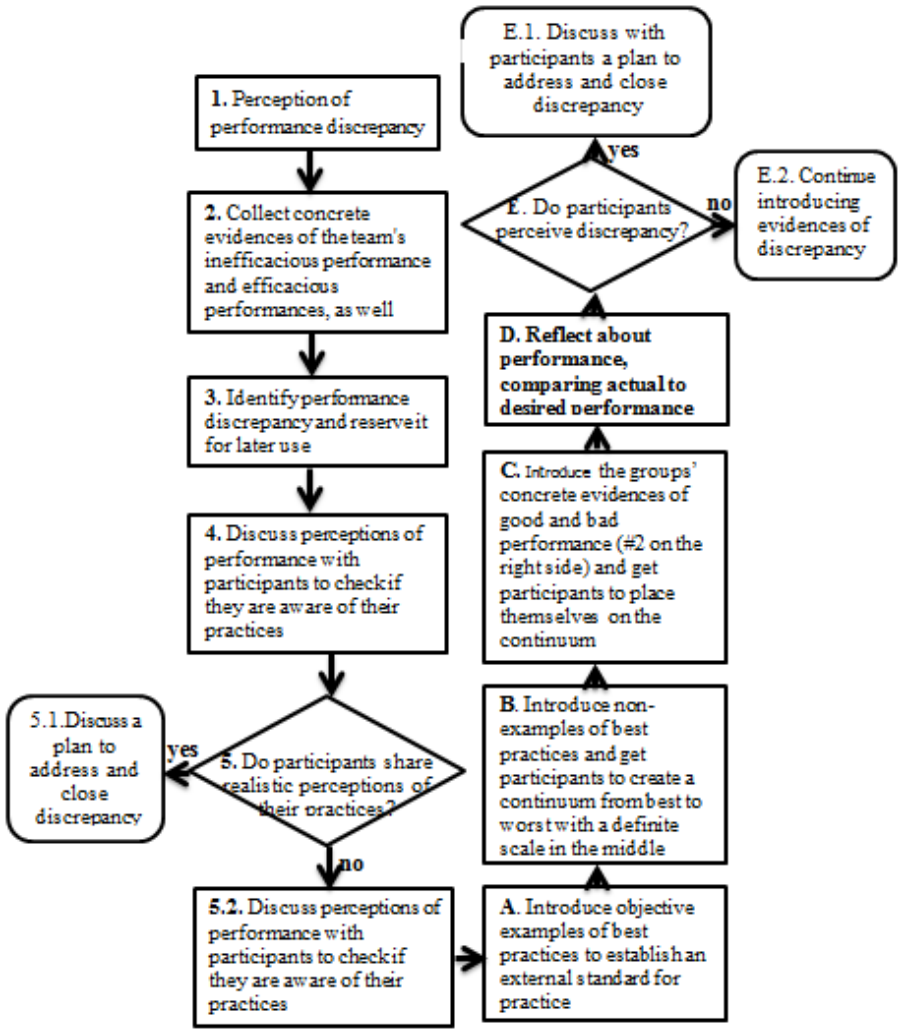
Introduction

The teachers participating in the research project showed commitment with the research by attending the workshops. They verbally confirmed that they believed that the research project was aligned with their needs and that they expected it to help them understand the dynamics of learned helplessness and prepare to address the issue in the classroom. However, they did not engage in the discussions, they did not return the research documents in due time, they did not seem to take ownership of the research process, and they did not perceive themselves as being co-responsible for the research results. Teachers did not perceive their performance discrepancy. In order to perceive the need to improve performance, teachers would need to recognize the performance discrepancy themselves.

The literature informed that performance discrepancy is hardly observed immediately after it happens, it is usually spotted by outside observers, and usually reflects negatively on both the individual performer and on the team (Clark & Nguyen, 2007; Porter, 1996). Identifying and addressing performance deficits in dynamic school environments may require extra care and a more complex decision making process. Some factors that make performance discrepancy more difficult to deal with in a school environment include: (a) the fact that variables are intertwined and impossible to be controlled; (b) outcomes may take years to show; (c) actions usually involve peoples' capacity to observe their own practices in an objective fashion; and (d) subjectivism, emotions, and passions are usually intrinsic parts of educational contexts (Duhon, Witt, Freeland, Dufrene, & Gilbertson, 2004; Mager & Pipe, 1997). Depending on the philosophy the performance environment, discussing performance discrepancy may be a rather sensitive matter (Porter, 1996). Evaluation can focus on the process (performance components)

or on final results. It can have the purpose of spotting “rotten apples” or improving processes in order to achieve more consistent and sustained quality over time. Ideal performers are reflective practitioners (Kepalaitè, 2010; Yip, 2007). They are fully aware of their processes, and they can accurately evaluate the results they are getting out of their efforts. Furthermore, they can compare their processes and achievements to external standards in order to ensure they can redirect their actions when necessary to achieve similar results. However, neither metacognitive awareness, nor reflective practice is naturally developed by most professionals (Brown, 1975; Schraw, 1998; Wells, 2008). They need to be intentionally developed. When they are not, the professional may develop a maladaptive interpretation of the results. Instead of attributing results to the processes, strategies, and efforts, they tend to attribute results (theirs and others’) to people’s personal characteristics or external conditions of the environment (Peterson, Maier & Seligman, 1993). If performance is good, people are happy; if performance is bad, they are depressed (Seligman, 2006). Reality testing is a process of appraisal of objective reality based on facts in opposition to subjectively construed perceptions of reality (Wells, 2008). It is a method used in cognitive and metacognitive therapy for adjustments of maladaptive attributional style. It is a useful performance improvement tool for individuals who fail to recognize the discrepancy between their actual and desired performance. When they objectively recognize the discrepancy, they search for workable solutions for improvement. Based on a performance improvement framework designed by Mager and Pipe (1997), the researcher designed and implemented the framework below.

Figure 1. Reality Testing Framework



Application of the Reality Testing Framework

1. Perception of performance discrepancy.

Despite the fact that the teachers had signed up for participating in the research project, understood the research procedures and expectations for their participation, and the fact that the research was aligned with their needs, teachers did not perform as expected. There was a clear discrepancy between the teachers' actual behaviors and the expected participation. Except for their discipline and respect to the researcher, teachers were displaying behaviors that resembled

the ones they attributed to their students: procrastination, lack of ownership, low responsibility for results, low care for research materials, and low motivation to engage in transformative action. They verbally reiterated support and enthusiasm for the research; however, their attitudes could affect the development of the workshops and compromise the research goal.

2. Collect concrete evidences of the team's objective inefficacious performance and efficacious performances, as well.

Acknowledging positive performance is important so participants do not have the impression that you are focusing on negative performance only. The research team's objective examples of efficacious performance or contributors to efficacious performance were as follows.

(a) More than half of the school teachers signed up for participating in the research (19 out or 30).

(b) All teachers read and signed a consent form agreeing with the terms of the research, which included active participation in the workshops and production of data.

(c) All of the participating teachers demonstrated verbal enthusiasm constantly acknowledging the alignment of the research purpose with the needs of the school community.

(d) The school board, as well as the school administrators, supported the research project.

(e) Teachers attended the workshops during their work schedule.

(f) Participants' attendance was consistent. Even on a strike day, thirteen teachers attended the workshop.

Objective examples of inefficacious performance or contributors to inefficacious performance were:

(a) In general the school was underachieving. The school's achievement index has not exceeded 4 out of 10 in the last decade. Recent research showed that 86% of school teachers in Rio de Janeiro attributed low academic achievement to the students' inappropriate behavior and lack of parental involvement. This was the reason why the research was being conducted at this school, so it counted as an example of negative performance, even though it preceded the implementation of the intervention.

(b) Even though teachers have complained about students' misbehaviors in class, they failed to implement the techniques recommended by the school board for improving behavior. Some teachers in this group received training on how to implement the techniques in the school board facility in the previous school year. However, during the research timeframe, the pedagogical coordinator and principal were having difficulties sensitizing teachers about the need to implement the techniques.

(c) Participants did not engage in voluntary discussions during the workshops. They called the research "a course" and all of them stated that their purpose for participating in the research was "to learn" instead of "to contribute" or "to collaborate" with solutions.

(d) Procrastination: The great majority of participants did not return the questionnaires or worksheets in due time.

(e) More than half of the participants had not returned the pre-test questionnaires after the third workshop. Some forgot to complete them, some forgot to bring them back, and some lost them.

(f) Two teachers out of 19 returned the student behavior checklist in due time.

(g) Two teachers provided an old lesson plan after the first request.

(h) Two teachers read the article on academic motivation when first assigned.

3. Identify performance discrepancy and reserve it for later use.

The expected participation that served as standard practice presupposed teachers' active participation in the discussions, production of data in due time, and willingness to incorporate the research elements in their practice in order to investigate the impact on the students' achievement and/or behavior.

4. Discuss perceptions of performance with participants to check if they are aware of their practices.

Based on the teachers' behaviors during research, a discussion about teaching practices in general was proposed. The purpose of the discussion was to raise consciousness of the connection between behaviors and consequences, success and failure being a direct consequence of ones' choices, and contingency between efforts and outcomes. This discussion aimed at alleviating the cognitive deficit attributed to learned helplessness, which consisted in the individual's incapacity to perceive the connection between their efforts and the outcomes generated by their actions.

5. Do participants share realistic perceptions of their practices?

Decision gate: At this point if participants demonstrated that they had a realistic perception of their practices, the work would progress to the creation of a plan to address the perceived discrepancy, as indicated in step 5.1. As participants did not demonstrate a realistic perception of their practices, the reality testing experience started, as indicated in step 5.2. Participants still attributed low achievements to the students and failed to recognize other influences on outcomes. All participating teachers regarded themselves as highly committed to teaching on the personal level; they believed that they had the necessary knowledge and skills to

teach in proper environments; their incapacity to teach in that school was due to the conditions of the environment. Such external attributions for failure and internal attributions for success indicated universal helplessness. This prevented teachers from perceiving that they could impact students' achievement and behavior through their pedagogical practices. Instead of trying to incorporate best practices, most teachers gave up trying to implement effective strategies for believing that, regardless of what they did, their efforts would be frustrated.

Teachers avoided practices that could be more effective for that population. Observed instructional practices, in the general, did not foster student engagement, focus, or interest. Most teachers applied techniques that allowed idleness and disruptive behavior. For example: (a) during interviews and class observations, the researcher's perception was that instead of empowering students by giving them control of some portions of their learning, teachers spent substantial amounts of time trying to control students' behavior; (b) instead of engaging students in active participation, teachers gave preference to one-to-many lecturing; (c) despite having high technology available, teachers used low-tech resources, such as black and white photocopies and text-based materials; (d) students were not informed of the objectives of the lessons; (e) classes usually consisted of direct delivery by teachers without opportunities of practice by the students alone, so feedback for performance was hardly observed; (f) teachers elicited whole-class answers, so the same students volunteered participation most of the times and some groups of students remained disengaged; (g) and evaluation of learning after activities was not observed.

A. Introduce objective examples of best practices.

Researcher introduced a list of the most common characteristics shared by highly efficacious schools drawn from outstanding academic sources. Items addressed were: school

philosophy, mission and vision; principals' leadership skills; teachers' actions; students' behaviors; parental involvement in the students' academic life; parent-teacher relationship.

B. Introduce non-examples of best practices and get participants to create a continuum from best to worst practices with a definite scale in the middle

From the same research sources, the researcher introduced a list of the most common characteristics shared by inefficacious schools, using the same items as the previous list. Participants compared the lists and created a continuum from best to worst practices with a scale in the middle where one represented the best grade and seven represented the worst.

The 17 participants attending the workshop were divided into seven groups. Each group should decide whether or not those two lists of characteristics were a valid external standard of best and worst practices. Groups could choose between: we totally agree, we agree more than we disagree, we disagree more than we agree, or we totally disagree. Five groups chose "I totally agree" and two groups chose "I agree more than I disagree", meaning that all of the participants agreed with the lists to some extent.

C. Introduce the groups' concrete evidences of good and bad performance (#2 on the right side) and get participants to place themselves on the continuum.

At this point, the researcher explained her position as an external observer, with an objective view of the group with regard to participation in the research. As an external observer, the researcher's perceptions were based on facts; therefore, the researchers' statements did not represent personal opinions or criticism towards their work. The objective was to prompt a fact-based reflection based on evidences of performance. Realistic causal explanations for the performance discrepancy might ensure that their participation in the research project would produce the impacts that the school community was expecting. The researcher presented participants with the list of indications of their efficacious performances and allowed them time

to think and discuss how they impacted the school quality. Following this, the researcher presented the group with the other list of indications of their inefficacious performances and asked the participants to think about how they could affect the school quality.

D. Reflect about performance, comparing actual performance to the agreed-upon external standards.

The seven groups were given a few minutes to look back at the chart of efficacious schools and reflect upon their individual performance as well as the school's achievement and compare actual performance to the external standards provided by the chart.

E. Do participants perceive discrepancy?

Decision gate: Teachers did perceive their performance discrepancy. On the scale from one to seven that they had created between best and worst practices, where "1" represented the highest grade and "7" represented the lowest grade, these were the grades attributed before and after the reflections:

	Grades before reflection	Grades after reflection
Validation of the list as appropriate external standard for bad and worst practices	All participants agreed with the list	Unchanged
Grade attributed to their school in the continuum from 1 to 7, 1 being best and 7 being worst practices.	5	7
Relevance of establishing standards to orient practices (using similar scale 1 through 7)	1	1
Group's general commitment (using the same scale)	2.5	4

Teachers were instructed to engage in reflections about the items included in the chart of efficacious and inefficacious schools, self-evaluate their personal commitment as well as the school's policies in relation to each item. Then they were invited to rethink the grades they had

previously attributed to their individual commitment level and to the school quality as a whole. As pointed out by the school coordinator at the final interview, the most important product of this reflection was teachers' realization that they attributed high scores to all of the items related to their performance and attributed low scores to the items related to the students. One teacher said: "If everything is so positive about the school and our performance, how can the students be so low achieving?"

The pedagogical coordinator was very happy with such realization because that was what she had been trying to convey to the faculty, that the students were not the only elements generating the school's low achievements. Besides perceiving the groups' performance discrepancy, teachers also perceived the unrealistic attributions the group was making for their performance as well as for the causes of low achievement. They consciously developed a new list of causal explanations for the low achievement in that particular school. The list included: (1) students' disruptive behaviors; (2) parents lack of involvement; (3) lack of perception of the utility of education by the society, parents, and students; and (4) teaching methods not capable of raising students' interests, engagement, and motivation to learn. This list with more than one item, the student, was important for the alleviation of learned helplessness because the main characteristics of helpless individuals, who make external attributions for failure, are that they view the world through only one prism, and they are incapable of internalizing locus of control (Abramson et al., 1978; Peterson et al., 1993; Rotter, 1968; Sahoo, 2002; Wells, 2008). These teachers not only broadened their attributions but demonstrated a shift of locus of control, from external to internal when they admitted that their teaching methods were also responsible for the students' outcomes.

E.1. Discuss with participants a plan to address and close discrepancy.

After creating a new list of causality for low achievements, teachers were invited to reflect about actions that they, as teachers, could implement in order to address the issues in the list. The group came up with the following suggestions: (a) study methodologies, techniques, and strategies that could work at that particular environment; (b) standardize teaching practices so all teachers would follow similar procedures with regard to discipline and class management; (c) take the responsibility of promoting positive school-families interactions; (d) discuss common difficulties and try to find common solutions; (e) provide support to the students with learning difficulties so as they become autonomous and develop at a desired level; (f) develop consistency of unified practices; (f) design a new pedagogical plan (referring to the school's political pedagogical plan).

Actions derived from the reality testing experience.

1. The researcher suggested creating an action research plan to address the issues in the list. Teachers accepted the suggestion. In the week following the workshop, two groups of teachers met with the researcher, created an action research plan, and shared it as an example of what could be done to address the problems (see Appendix M).
2. The group decided to discuss the concept of commitment to develop common understandings of what commitment meant and what it included. That was done in the following workshop. The researcher started a concept map about commitment, teachers discussed the items in the map, the cause-consequence relationship between them, added items that they considered relevant, and created a common definition of commitment that included action and responsibility with final results.

Teachers' behaviors during the remaining workshops changed substantially. They participated more actively. The research project finished four weeks after the reality testing workshop. On the very last day some students engaged in disruptive behaviors in one classroom. They went into other classrooms forcing other students to follow them. Teachers could not contain some of the students who wanted to follow the raucous. As a consequence, several students from different classes were suspended. Teachers were very upset; the inspector on the floor was very disturbed. He could hardly articulate what he wanted to say. One of the class observations was cancelled. All the other research-related activities were conducted, which demonstrated the high commitment teachers had with the research work. On that day, all of the 16 main participating teachers attended the workshop, 16 final questionnaires were returned, 16 final evaluation worksheets were completed. By then, all of the seven focus team participants had planned and taught at least one lesson using the new lesson plan, and six teachers had their classes observed and received feedback. The eight focus team participants recorded final interviews and three of them videotaped testimonials about the impact of their participation in the research.

How participants perceived the reality testing experience.

In the final interview a common theme mentioned by all of the focus team participants regarded the impact of the self-reflections and self-evaluations on their practices. The pedagogical coordinator stated that such reflections were useful, not only for the immediate purpose of raising awareness about current practices, but they would also help the group to reevaluate the political pedagogical plan at the end of the school year:

> …And, this hook of self-evaluation from somebody who is outside the group - was very interesting- I think it was very interesting and the group trusted you- and the group really exposed themselves - the group was not afraid - this was very good because the people were really willing to speak out, they trusted you - Because…hum… at the time of the PPP (referring to the Political Pedagogical Project- annual evaluation and planning) - it is very difficult because they are not silly - they are all teachers - we would easily find people in the group with enough capacity to be a coordinator - to be a principal - nobody is naive here - so when it is time to do the PPP - the people protect themselves - they are afraid, they have one another's back - they don't want to be blamed for anything and- with you - that did not happen - the people said the truth - So much so that last week - when you challenged everybody's pride, there was a reaction - that did not go past them without affecting them- … It hurt - it wasn't indifferent – And (pause) this is a good thing not a bad thing - I think that if it had not affected them - that would have been bad - So much so that in the next days, there were comments about that - about two weeks ago - that teacher's reaction was important because my reactions are obvious because I know the group well - I am not blindfolded here - but the teacher's reaction was very good because I am not the only one who realized that there was a problem - "How could everything in the school be so good and only the student be so low in the scale?" It is good that other people perceive it - I think this is all good - we shall see what will come out of it.

Quotes form the participating teachers.

> We had expected something different - the research took a spin into self-evaluations and now seeing the results in my class is that I feel more relieved because I have not wasted my time (pause) this was not in vain - there has been an impact (Fabiana).

> At the beginning - myself and some other teachers thought that you would work with the student and you actually worked with us but it was positive because we could make a self-evaluation – and - most of the times we are focusing on the student when we should be reflecting about ourselves (pause) about our practice (Jozi).

> I think that in a certain way (pause) all the teachers - not only myself - but all the teachers who participated in this research - I think all of them - in a certain way - have been impacted and impacted one another or our everyday practice – and - I think we need to do this kind of thing constantly - where we can reflect upon our practice because this is something rare in our day to day practice to reflect about our practice (Arthur).

Discussion

Based on the last quote "…And - this hook of self-evaluation from somebody who is outside the group - was very interesting. I think it was very interesting and the group trusted

you”, the conclusion is that the teachers trusted the research process, rather than the researcher personally. It is very common for the person conducting a reflective process to be perceived as a leader, the one who makes things happen. That may be the reason why the coordinator personalized the participants’ trust on the researcher by saying “they trusted *you*”. However, such trust should be better attributed to the research process. The teachers would not have trusted a complete stranger, knowing that the stranger was recording their practices and behaviors to disclose them in scientific research that could possibly be made public, had they not felt they were part of it. More than trusting a stranger, they trusted the methodology: they perceived the systematic, consistent, and theoretical grounding of the process; they perceived the relevance of what they were doing; they trusted that the research was aligned with their needs and, therefore, it could help them improve their performance. Furthermore, they perceived that the work was centered on them. They were the actors, not the audience of the play. The leader of a reflective process must be a “guide on the side”, rather than “a sage on the stage”. After all, "Leadership is the art of getting someone else to do something you want done because he wants to do it " (quote attributed to Dwight D. Eisenhower).

Appendix L: Common Characteristics Between Efficacious and Inefficacious Schools

	Characteristics of efficacious schools	Characteristics of inefficacious schools
Principal	• They are efficient educational leaders, who models academic leadership and lead initiatives to improve instruction. • They empower the staff, by giving them autonomy and control over their pedagogic practices; • They fight for appropriate resources and rewards for teachers and students alike; • They advocate for teachers and students.	• They are administrators and disciplinarians. • They represent the bridge between the district authorities and the school community.
School's mission, vision, philosophy, guidelines…	• Establishes high standards and high expectations across the board, but puts mechanisms in place so that goals can be met by all stakeholders. • Operates on trust and shared responsibility • Provides scaffolding for accelerating weaker students and equip them to catch up with the rest of the class • Develop programs for parental involvement. Count on parents for helping the school to better serve the community. Encourage several levels of parental involvement. Create conditions for all parents, regardless of socio economic status or school background, to participate meaningfully in the school life. • Involve community leaders in the school activities and search for role models in the children's immediate community. • Academic practices are based on mastery of learning, rather than performance. Students make progress in different levels, receive corrective feedback, receive scaffolding, and are evaluated multiple times in a variety of ways during the process of learning, rather than for one final product. • Academic activities are structured for the students' developmental level, however, students are encouraged to work in groups, and become self-directed learners. • Activities respect different student abilities, timing, and learning styles. • Relationships are based on the promotion, recognition, and praise of positive attitudes and positive results. Threats of punitive measures for inadequate behavior or results are avoided across the board. • Respect is mutual, modeled by all, and expected from all.	• Either do not have uniform high standards, does not have high expectations at all, or have high standards and high expectations, but do not provide mechanisms that allow people to succeed. • Operate on compliance and fear • Students receiving remedial support never leave the status of weak students. In many cases they are placed in special classes for struggling students, becoming segregated and stigmatized as weak students. • Blame parents for neglecting the children's education. Complain that the parents do not help. Count on parents for disciplining their children, for helping children learn, for participating in physical school maintenance work, or fundraising events. • Does not encourage community involvement. Have a tendency to manicure the school for visitors. • Academic practices are performance oriented, based on final results. • Classroom practice tends to be based on teachers' lectures - "one-to-many" transmission. • Students tend to work individually. • Activities tend to level all students according to ability level. • Relationships are based on vertical power structure

Teachers	• Teachers buy into the high standards, apply high standards to themselves, expect high standards from the school administrators, fellow teachers, staff, and students. They are open to working harder, and experimenting with new methods, provided they believe that success is a possibility and that others will do the same. • Teachers are not afraid to express their ideas. They welcome opportunities to share, teach and learn from their peers.	• Teachers resent high standards. They do not have high expectations for their students. • Teachers spend less time with active teaching, monitoring students' progress, or providing scaffolding. • Sharing best practices is not a habit. • Teachers may display pessimistic behavior towards new ideas and suggestion of solutions.
Students	• Students display better behavior when they perceive the utility of academic efforts and engage in meaningful academic activities. •	Students develop a high sense of academic futility. Students engage in disruptive behaviors because they spend less time doing academic work.
Parents	• Parental involvement is crucial to avoid that children are misplaced in low academic tracks. • Parents receive guidance on how to help children at home. • Parents are taught to view education as a shared responsibility between family and school • Parents are shown that they can make a difference in their children's schooling • Parents expect to be called to visit the school at any time for good reasons. • Parents welcome school visits to their home and welcome training on how to help their children.	• Parental absence allows misplacement of children in low academic tracks. • Parents do not receive guidance on how to help children at home. • Parents, especially the ones from lower socio economic status and lower academic background, feel intimidated by schools. • Parents do not believe they can make a difference in children's schooling • Parents only expect to be called to visit the school when something unpleasant happens or when the school needs help. • Parents do not understand why they should help the school. They see it as an extra burden.
Parental involvement is crucial to avoid that children are misplaced in low academic tracks (Dornbusch,		
Parents & teachers partnership	• Teachers' sense of efficacy influences parental involvement. Teachers who believe in the efficacy of their practice invite parents to participate in class activities and get to know what they are doing. Efficacious teachers take charge of parent-teacher contract of cooperation. Efficacious teachers know what the students need, how the parents can help, and provide guidance for parents within the parents' capacity of time and resources. • Parents have a greater tendency to contact teachers that they judge to be competent, hard-working, and interested in helping the students to learn. •	• Inefficacious teachers do not seek parental involvement. • They do not know how or do not bother to give guidance for parents to help students at home. • They fear to have flaws exposed. Fears that asking for parental help, may indicate their incompetence in handling teaching. • To avoid embarrassment, parents have a tendency to withdraw from teachers who they perceive as not competent. • Parents prefer to talk to the school authorities, instead of liaising with an inefficacious teacher.
(Bandura, 1997; Brandt, 1989; Coladarci, 1992; Dornbusch, 1994; Hoover-Dempsey, Bassler, & Brissie, 1987, 1992; Hoy & wolkolk, 1993; Lareau, 1987; Peterson, 1989)		

Appendix M: Action Research derived from teachers Metacognitive Reality Testing

Nome da Escola (RJ)

Pesquisa de ação

A pesquisa de ação é muito semelhante à prática quotidiana de bons professores. Um bom professor observa os fenômenos que ocorrem em sua sala de aula, ou em sua escola, buscam um entendimento do fenômeno através de fatos, examina a possibilidade de impactar o problema observado, planeja um curso de ações, avalia suas ações, reflete sobre os resultados e reorienta sua prática (Kemmis e McTaggart, 1988). Pesquisa de ação compreende entendimento e ação. O pesquisador busca compreender o problema e empreender as ações necessárias para a solução de forma sistemática e bem documentada.

Apenas a pesquisa de ação utiliza uma metodologia específica, mais sistemática e mais rigorosa do que a experiência diária do professor. O rigor, confiabilidade e validade da pesquisa de ação dependem diretamente do comprometimento dos pesquisadores, da discussão e reflexão crítica consistentemente utilizada pelos participantes (Dick, 1997; Uhlmann, 1995). Anotações e diário de pesquisa são dados importantes para a avaliação processual e de resultados da pesquisa (Hughes, 2000b).

Em um ambiente educacional a pesquisa de ação pode ser realizada por um professor que deseja buscar soluções para um problema educacional prático circunscrito a sua sala de aula ou por um grupo de professores interessados em um fenômeno comum, trabalhando de maneira colaborativa. Os professores podem contar com a ajuda de um pesquisador interno ou externo ao grupo (Cohen & Manion, 1990). A pesquisa de ação envolve todos os stakeholders (partes interessadas) e pode usar dados quantitativos e qualitativos.

A pesquisa de ação possui três fases principais: Diagnóstico, planejamento da ação e avaliação (Dick, 1997; Susman, & Envereda, 1978), sendo que cada um deles pode subdividir-se em passos menores. O diagnóstico refere-se ao entendimento inicial do problema e pode envolver (a) a identificação do problema, (b) identificação de possíveis soluções já existentes na literatura especializada, (c) busca de um parâmetro de qualidade ao qual o problema em questão pode ser comparado. O planejamento da ação refere-se à criação de um plano de ação visando à

solução do problema observado e pode incluir (a) definição de objetivo(s), (b) procedimento (passo a passo), (c) metodologia, (d) estratégias de implementação, (e) processos de avaliação formativa. A avaliação final, de acordo com Dick (1997) pode ser subdivida em (a) avaliação do processo utilizado, (b) avaliação formativa (cíclica durante o processo). Ao contrário da pesquisa tradicional quantitativa que coleta todos os dados para depois analisá-los de forma isenta de interpretação, em pesquisa de ação a análise, interpretação e conclusão acontecem em diversos momentos durante o processo da pesquisa.

O relatório da pesquisa de ação geralmente inclui: (a) Introdução, (b) revisão de literatura, (c) descrição da metodologia e procedimentos (objetivo(s), variáveis, método, coleta de dados, instrumentos (questionários), participantes, método de análise dos dados), (d) resultados, discussão, conclusão (Hughes, 2000b).

Sugestão de pesquisa de ação para a Escola Municipal X

Diagnóstico (sugestão)

Problema: Alto índice de indisciplina durante as aulas e baixo rendimento da escola. IDEB da escola em uma escala de zero a dez: 3.2 em 2005, 3.0 em 2007, 3.7 em 2009 (INEP, 2011). O alto índice de indisciplina e baixo rendimento da escola fez com que ela fosse incluída no grupo de Escolas do Amanhã.

Escolas do amanhã é um programa criado para apoiar escolas em áreas conflagradas com características semelhantes às da Escola Municipal X. O programa consiste em:

Objetivo: Plano de colaboração entre escola, alunos e responsáveis visando a diminuição de problemas disciplinares que possam prejudicar o processo de ensino aprendizagem.
Dados que originaram a pesquisa de ação: A proposta da pesquisa de ação derivou-se de uma discussão reflexiva como parte integrante da intervenção metacognitiva para o alívio da desesperança aprendida sendo realizada na escola. Inicialmente os professores atribuíam os baixos rendimentos da escola à falta de disciplina dos alunos e à falta de participação dos pais na vida escolar dos alunos. Esta perspectiva de atribuição de causalidade para o fracasso escolar

vem se repetindo ao longo dos anos. Estudo realizado pela Universidade Federal do Espírito Santo em 1991 concluía que: "Em geral, as percepções docentes deslocam o eixo da causalidade do fracasso escolar para as condições econômicas e sócias psicológicas da criança e de sua família, eximindo o professor de responsabilidades (Gama, Lucas, Salviato, Jesus, Carvalho & Doxsey, 1991)." Em 2009, conforme publicado em jornal de grande repercussão em 26 de março de 2012, o INEP anunciou que durante a prova Brasil de 2009, 88% dos professores do Rio de Janeiro e Recife atribuíram o baixo desempenho aso alunos e pais (INEP, 2009).
Após atividade de aferição de realidade durante a intervenção metacognitiva para o alívio da desesperança aprendida, os professores participantes concluíram que, embora a falta de disciplina dos alunos e pouca participação dos pais na educação dos filhos, sejam as principais causas do baixo desempenho dos alunos, a inabilidade dos professores de lidar com o mau comportamento dos alunos e prática didática incompatível com as necessidades e interesses dos alunos do novo milénio podem estar afetando o processo de ensino e aprendizagem nas escolas públicas. Assim sendo o grupo identificou quatro principais problemas para o desempenho da Escola X nesta ordem:

1. Indisciplina dos alunos, mau comportamento, principalmente devido a falta de percepção da utilidade da educação e falta de consequências para o mau comportamento.
2. Falta de participação dos pais na vida escolar dos filhos que não os educa, não os prepara para vida social na escola, e não valorizam a educação.
3. Inabilidade dos professores em lidar com os problemas de comportamento dos alunos
4. Prática didática incompatível com as necessidades e interesses dos alunos.

Planejamento da ação (sugestões baseadas nas listas de características comuns a escolas de alta eficácia sintetizadas pela pesquisadora Elza Soares durante implementação da intervenção metacognitiva para o alívio da desesperança aprendida).

a) Estreitar o relacionamento com os responsáveis:

- Estabelecer um canal aberto de comunicação com pais para informar todas os benefícios atuais do sistema escolar (GEO, Vilas Olímpicas, dinheiro extra para alunos com bom rendimento (?) e da escola (professores interessados, estudando,

buscando maior qualidade, tecnologia disponível para uso diário) para o crescimento dos alunos.

- Planejar reuniões dando ênfase em coisas positivas, informando andamento de projetos, rendimento dos alunos, progresso em relação ao comportamento.
- Informar sobre a pesquisa de ação e solicitar participação com sugestões, participação em entrevistas (perguntar aos pais o quê poderia ajuda-los a participar mais da vida escolar dos filhos, como horário diferenciado de reuniões, visitas com hora marcada, etc.)
- Planejar palestras para os pais sobre como ajudar seus filhos, importância do apoio da família para o desenvolvimento saudável da criança, como as crianças aprendem, e porque a atenção e o comportamento são tão importantes na sala de aula).
- Criar em conjunto com os pais uma cartilha com uma rotina para pais e filhos em casa levando em consideração possíveis condições adversas das famílias dos alunos.
- Criar um ambiente agradável para a visita dos pais, com local confortável, tratamento cordial de forma a valorizar a visita do pai, aliviar suas preocupações para que ele possa sentir-se acolhido ao ponto de desejar participar da vida da escola.

b) Plano de modificação de comportamento:

- Criar um contrato de modificação de comportamento com a participação dos alunos, dando a eles a percepção e controle na identificação de comportamentos a serem extintos, comportamentos a serem incentivados ou recompensas e consequências. O plano deve incluir instrução de como se comportar em todos os ambientes da escola (corredores, pátio, banheiros, dando ênfase especial à sala de aula).
- Ensinar aos alunos a metacognição e como eles poderão planejar, monitorar e controlar seu próprio comportamento a cada aula, cada dia, cada semana.

- Convidar visitantes de diferentes profissões que tenham estudado em escola pública para conversar com os alunos e mostrar a importância que a escola teve na sua vida pessoal e profissional.
- Criação de um tribunal de resolução de conflitos, dúvidas e replanejamento
- Aplicação das regras por todos os professores, inspetores e equipe de direção.

c) Prática didática unificada:

- Adoção de um planejamento de aulas unificado que replique o processamento cognitivo da informação.
- Uso de um modelo de motivação
- Uso de planejamento, monitoramento e avaliação metacognitiva para cada atividade de aula.
- Ensinar aos alunos como estudar
- Usar técnicas de ensino diversificadas
- Fazer uso frequente da Educopédia
- Procurar usar novas tecnologias com objetivos educacionais bem definidos como forma de motivação e engajamento

Sugestão de procedimento

Dividir as tarefas entre quatro grupos de professores verdadeiramente comprometidos (dentro da concepção e comprometimento que envolva conhecimento, engajamento e reponsabilidade pelos resultados).

Grupo 1: Responsável pela organização dos dados , redação e organização da pesquisa.

Grupo 2: Responsável pelo design e coordenação da implementação do plano de relacionamento com os pais e comunidade.

Grupo 3: responsável pelo design, implementação, monitoramento, avaliação e reorientação do plano de comportamento dos alunos

Grupo 4: Responsável pela implementação e prática didática unificada e utilização de recursos diversificados para toda a equipe.

Avaliação (Sugestões)

Criar etapas com datas marcadas para examinar dados coletados, analisar, interpretar e avaliar ciclicamente os dados relativos a uma etapa antes de partir para outra. Criar um mecanismo de controle para que todos os pesquisadores trabalhem de forma igualmente comprometida e apresente desempenho semelhante. Realizar reuniões periódicas para avaliação formativa do processo e verificar a integridade do rigor, confiabilidade e validade da pesquisa.

Continuidade

Verificar se o processo poderá ser replicado em outras unidades escolares, fazendo recomendações e informando as limitações do processo para que outros pesquisadores possam se beneficiar do trabalho da equipe. Procurar publicar o trabalho em espaço científico como contribuição do grupo à ciência da educação.

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Appendix N: Lesson Plan Template in English

Title of activity or lesson.							
Objectives				**Assessmt**		**Support**	
Events	**MUSIC**	**Mtgtn**	**Description of activities**			**Time**	**Class material**
Gain Attention		**Plan**					
Inform Objectives							
Recall of prior knowledge							
Present the content		**Monitor**					
Provide Guidance							
Elicit performance							
Provide feedback on performance		**Evaluate**					
Transfer							
Next Class		**Connect**					

Appendix O: Observational Data

Presentation of observational data from the implementation phase.

School environment.

The school personnel were very friendly. Within their responsibilities and authority, they provided all information and materials necessary for the workshops. I was allowed to walk freely around the school facilities and talk to every member of the community. I had lunch at the school dining area every time. I was free to go into the kitchen and choose my own food. I sat for lunch with the school staff most of the time (cleaners, cooks, inspectors, and nurse). They were open to talking about the school and the students. They demonstrated sadness with regard to the life situation of the students and the community outside the school. They disapproved the students' behaviors; they could not articulate how the indiscipline had escalated to such high level; and they repeated several times that they could not understand why the school authorities (at district level) did not take firm action to discipline the students in the school, as they used to do when they were children. All of them came from poor families, studied in public schools, and none of them had experienced such level of disruption in their schools. They said they were sorry for the teachers who had to study so much, had the dream to help people develop their potential, and ended up working in such a hostile environment. One of the inspectors (an inspector is a disciplinary agent) said that when he went to work at the school, he wanted to be a teacher. He totally gave up being a teacher after he started to work as an inspector. He is going into law school, instead. The staff shared the teachers' beliefs that nobody can teach those students. The cooks complained that the students fought in the line for food, threw food on the floor, stepped on the food, and even threw food on each other. I asked them if they had tried to educate the students about how to behave in the dining area and how to handle food. They replied that they

had never done that because it was not in their authority to do it, and they did not believe that it would work because those students did not want to learn anything. “They should bring that from home - they are rotten already - if they throw food on the floor, we clean it,” said one of the cooks. Another one said, “This is a zoo, teacher, not a school anymore.”

School administration.

Three members of the school administration team were on site everyday: the principal, a deputy principal, and the pedagogical coordinator (who is closest to the teachers and students and highly respected by the school community). The administrators were very friendly, flexible, understanding, and tried to connect with the community outside the school. Inside the school, the administrators were very close to the teachers and staff. There was constant dialogue among all members of the school community. “We have each other’s back”, says one of the school officials. The administrators were very open to and supportive of any measures that could improve the school’s achievements, atmosphere, and level of functioning. An example was the fact that they allowed this research project to be conducted within the teachers’ center of study time and provided whatever resources the research needed. However, I observed some degree of concern about what I was going to report to the school board about the school functioning. I mentioned once that I had visited another school (high achieving experimental school) to experience the conditions of a different environment. I also mentioned that the visit occurred in the company of a school board official. Both the participating teachers and the pedagogical coordinator of the school where the research was being conducted had a very negative reaction to this. They thought I was connected with the school board. They were afraid I was going to report their practices. This created an uncomfortable situation. The teachers’ distrust in my “connections” with the school board could affect their participation in the research. I felt the

need to address the problem in the following workshop when I reminded the teachers that I was abiding by the Institutional Review Board's anonymity requirements and that I was not, in any level, connected with the school board. My visits to the school board and other schools in the system were necessary for the collection of accurate data. As a researcher my commitment was to seek better understandings from all parties involved in the system. So it was important for me to experience their reality, another reality that contrasted with theirs (the conditions of the experimental schools), and the technical conditions that could be accounting for such contrast (the school board). For the sake of the integrity of the data the teachers would provide from that incident on, I decided to quit any contact with the school board. This would prevent participating teachers from feeling threatened. It seemed to have worked because, in the final interview, the pedagogical coordinator acknowledged that that incident was dealt with properly and the teachers trusted me:

> The only negative thing, a little problem I see, was that we had a little doubt whether or not you were connected with the school board; this school attracts a lot of attention, our school is under the spotlight, but we could come clean quickly and that was OK.

The reasons why the teachers were concerned about their practices might have been generated by learned helplessness and low instructional efficacy because they made external attributions for failure (Abramson, 1978; Bandura, 1997; Goddard, Hoy & Hoy, 2000; Hoy & Woolfolk, 1993). They did not perceive that their actions could generate outcomes. So, they were always expecting negative feedback. Bandura (1997) as well as Schunk and Pajares (2005) explain that the confidence in one's capacity to produce results does not come necessarily come from realistic evaluation of competence. Individuals have a tendency to view reality as they believe it is, rather than, as it really is. Therefore, the fear that participating teachers demonstrated with regard to my contacts with the world outside the school might not have been

generated by their belief that they were doing something wrong. As they did not perceive the connection between actions and outcomes; even though they were not doing anything "wrong" they could still expect reprimand from the school board. Furthermore, my contacts with the school board were bringing to light a reality that their maladaptive explanations were trying to hide. I was disclosing to their consciousness resources and opportunities of success that they did not want to see. Because, once helpless individuals are exposed to evidence-based reflections, their explanatory style tends to change. Seligman (2006, p. 45) explains that "your explanatory style is more than just words in your mouth when you fail. It is a habit of thought…Your explanatory style stems directly from your view of your place in the world – whether you think you are valuable and deserving, or worthless and hopeless. It is the hallmark of whether you are optimist or pessimist." So, perceiving the truth could be hurtful and would demand action on their part. They would have to engage in actions that they were not used to or, even, trained for. Making external attributions for outcomes, is easier to cope with than assuming responsibility for results because individual who make external attributions do no regard themselves as responsible for bad events. They do not make self-worth comparisons and do not develop low self-esteem. Assuming responsibility, means internalizing locus of causality. Individuals with internal locus of causality attribute causes of bad events to themselves. According to Seligman (2006), this can cause low self-esteem and depression.

The teachers knew that the information I collected during my visits to the experimental school, and the school board, contrasted with what they had been complaining about. The items described below are some examples of contrasts between the teachers' beliefs and the information I collected outside the school.

- *Teachers' stated Belief:* Teachers complained they did not have autonomy to do anything with regard to student behavior. *Evidence:* The school board current administration released 699,500 copies of a brochure containing the schools' policies with regard to behaviors (Appendix R). The content of the brochure included: (a) rights and responsibilities of teachers (page 4). (b) The determination that each school should have a School-Community Committee to generate and foster good relations between schools and their surrounding community (page 5). Connecting with the community outside the school is also one of the main goals of the Schools of Tomorrow. (c) Rights and responsibilities of the students (pages 6 and 7). (d) Consequences for not following the guidelines (pages 8 and 9). Consequences progressed from verbal reprimand to suspension and referral to appropriate agencies (referring to the juvenile court council - Conselho Tutelar).
- *Teachers' stated Belief:* Parents did not get involved in the children's academic life. Evidence*:* Some parents got involved with their children's academic life. Parents or guardians were observed in the school every week. Some came because they were summoned by the school, but others came to make complaints. Most students were well groomed when they came to the school, wore uniform, and some even brought their own lunch or snacks, despite the excellent quality of the food served in the school. The government gave backpacks to the students, but some students brought their own fancy backpacks. Somehow these students were taken care of by their families or guardians.

- *Teachers' stated Belief*: Teachers complained that the school board did not value their work and the society did not appreciate their efforts. The following quote was extracted from the initial interview with a focus team participant:

> It is also more stressful because this school performs below average - so we have to work harder than the other schools and we do not have any recognition. It is not that we should be compensated differently but I think we should have some kind of benefit, like an incentive - I don't know - They have prizes per school - I think it should be per class, per teacher - the teacher who achieves the goal in his class, should be recognized, not the whole school (Jozi).

Evidence 1: Financial compensation – According to M. M. Pinto (personal communication, October, 02, 2012), school board official, all of the personnel working at a school that achieves the targeted achievement index (IDEB) or surpasses it receive one full bonus equivalent to one month's salary on the month subsequent to the publication of the IDEB results. This school achieved the targeted IDEB in 2011, the results were published in August 2012, and all of the school personnel have already received the bonus. The only condition that could prevent an employee from receiving the full bonus is the number of unjustified absences during the school year.

Evidence 2: The school board had a content management system (Rioeduca) (www.rioeduca.net) where schools and individual teachers can publish their achievements, the programs, and projects they are developing. They can share experiences and teach and learn from one another. There are several opportunities of awards for teachers and students. Schools and teachers can create blogs and have them available through Rioeduca. The website informs the school community about seasonal projects, guidelines for participating in contests and deadlines. Besides the website, the city hall has a direct telephone line with four numbers, 1746, to facilitate contact with any of the municipal agencies. This direct line has the school board in

the menu of options and transfers calls directly to the school board programs menu where schools, teachers, and common citizens can get information about programs and projects.

- *Teachers' stated Belief:* Teachers complained that students were unmotivated and disinterested and that the students' underachievement undermined teachers' motivation. *Evidence 1*: The Rioeduca website advertised a series of opportunities for the students (and teachers) to display their work. The website front page had a dropdown menu with 43 options of opportunities of engagement for schools, teachers, and students. Apart from these fixed menu items, isolated opportunities and trainings were also provided. Getting engaged in district wide projects and competitions could increase teachers' and students' motivation to perform. *Evidence 2:* The 1,064 schools in the municipal system are divided into 10 regional administrative areas (CRE), which bridge the contact between the school board and the schools in their geographical areas. Each one of these areas has one experimental school, Ginásio Experimental Carioca. These schools operate in a full time system and have appropriate material, human, and technological resources. In these schools, students develop a lifelong plan of study; students have elective courses according to their lifelong planning; discipline does not seem to be a problem; and teachers are encouraged to use diverse methodologies. The possibility of applying for a position in the experimental schools should be a motivating factor for teachers and students who would like to experience a more functional environment. *Evidence 3:* The school board inaugurated a sports magnet school in the city in 2012 and is building two others to start functions in February 2013. The plan is to have one of these schools in

each CRE. The conditions for studying in these schools are: interest or talent for Olympic sports and good discipline. This could be a motivator for some students to improve their behavior. These schools select all teachers from within the system. They do not have external recruiting. Teachers are selected according to their interest in the project and their demonstrated teaching abilities in their original schools.

Evidence 4: Field notes from the visits to the schools and conversations with school board officials indicated that the physical conditions of the facilities, the material, and technological resources of the experimental schools are similar to the ones found in the School of Tomorrow where this research was conducted. The School of Tomorrow had even better operational conditions than the experimental school. It had superior internet connection and a more structured possibility of class schedule within the seven-hour timeframe. Whereas, the class scheduling of the magnet school seemed more challenging due to the students' training schedules in the different modalities of sports. What seemed to make a lot of difference was the motivation of the faculty and students, the accountability, and the expectations of the school board with regard to both teachers and students in the different schools. Fact 5: The school board is planning to open a technology magnet school in the next four years. According to the self-efficacy theory, the current programs and possibilities of mobility offered by the school system should be enough to increase the motivation of efficacious teachers to perform in their original schools in order to benefit from the opportunities available. However, Bandura (1997) cautions that, what efficacious teachers view as challenges and opportunities, inefficacious teachers view as stressors and threats (Bandura, 1997).

In a context where more than 80% of the teachers make external attribution for failures (INEP, 2012) and demonstrate low teaching efficacy, the investments and the success of the programs implemented by the school system could be compromised by teacher's unrealistic perception of reality. The development of realistic appraisal of reality is essential for attitudinal change (Wells, 2008). In order to make efficacious use of the resources to impact the quality of education, the school community needs to recognize the current positive conditions of the environment, change causal attributions for low achievements, and perceive the possibility of success (Thompson, 2004) as well as training to increase general teaching efficacy (Tschannen-Moran et al., 1978) and increase motivation to teach (Coladarci, 1992; Swackhamer et al., 2009).

Faculty.

I will start with a quote from a school official recorded during the initial interview:

> How can I describe the teachers? I think that individually, they are very well prepared people - Individually, they try to do good quality work - I don't see teachers here missing days of work - reading the newspaper - doing other things that are not pertinent to their work in the classroom - I think they do it, but I think they are not efficacious enough. I think we should study more - I told you that before - to study more on how we can work with this public… I think the teachers here believe that there is a uniform way to teach and they keep trying to teach in that way that they think is valid across the board. The same way they used to teach five years ago, they think can be effective today, and I don't think so. I don't see it that way. You can't use the same method even in a different classroom - if you change classroom sometimes everything changes. I think this is a problem but I don't think this is the worst thing, I think that the worst thing is when you don't have any more energy to teach (Tamires).

The faculty in this school did not seem involved in district wide projects, most of them did not access the school board website and did not know about opportunities for themselves or for the students. During the implementation of the intervention, the researcher attended a one-day professional development for physical education teachers in a Olympic Village. The Rio de Janeiro Municipal school system owns several sports complexes where students and the local

community can exercise and train Olympic sports. The teachers working in these facilities dedicate part of their time to research and performance improvement. Each Olympic Village is strategically located in a different CRE to facilitate access of teachers and students. The aforementioned professional development was led by the Brazilian Olympic Committee. None of the physical education teachers at the school attended. When asked why they did not take advantage of the event, they stated that they did not know about it. The event was advertised in the Rioeduca website and emails were sent to the CREs, who was supposed to forward them to the schools coordinators to inform the teachers. Teachers with access to Rioeduca have an advantage over teachers who wait for the school's communications (M.-M. Pinto, Personal communication, October 02, 2012). Another example of indications of teachers' lack of information concerns opportunities for students. Once, talking to a group of students considered to be among the most disruptive ones, the researcher asked them what they wanted to be when they grew up. One of them said he wanted to be a firefighter, another said that he liked martial arts but he did not know whether or not he wanted to be a physical education teacher, and the third one said that he wanted to be a soccer player. The researcher asked them if they knew that they could apply to study at the sports magnet school (Ginásio Experimental Olímpico – GEO). They had never heard about GEO. The researcher told them about the possibility of studying at a school where they could practice sports and study the academic subjects; however, in order to study there they needed discipline to train and study hard. They were very excited and asked how they could apply for that school. The researcher reminded them of the behavior requirement and they said that they could change their behavior at any moment if they wanted to. The researcher asked their teacher if she knew about GEO, and she did not know about it. She thought GEO was the same as GEC, another experimental program implemented by the school board. The

researcher asked some school officials if they had the information about GEO to inform the students and they also mistook GEO for GEC. The researcher concluded that that school community was not well-informed about opportunities that could enhance teachers' and students' motivation to perform. However, in order to take advantage of the opportunities available teachers needed to develop a positive attitude towards the students' capacity to perform, towards their own capacity to organize and carry out the courses of action necessary to help the students succeed, and envision possibilities of success. This level of functioning can be rather difficult to be achieved in an environment affected by low instructional efficacy or learned helplessness (Bandura, 1978, 1993; Thompson, 2004; Tschannen-Moran et al., 1998; Tschannen-Moran & McMaster, 2009).

The school keeps a good balance between male and female teachers, younger and more experienced teachers, teachers living near the school neighborhood and far from the school. The teachers have a good relationship with one another. They always treat each other with respect and courtesy. Despite teachers' perceptions of the students as being misbehaving and lacking in basic social skills, teachers treat students with respect and caring. During troubles in the classroom or in the halls, teachers usually stand aside and try to protect the students who are not involved in the fights.

The elementary teachers seem to exchange more, help each other more, and work in a more unified way than the middle school teachers. They attributed this to the fact that they stay longer with the students, they have greater concerns with students' life skills, they educate the students rather than just teach content, and they have a different holistic teacher formation. Elementary school teachers articulated that they thought middle school teachers had less connection with the students (at least time wise), they had a fragmented view of the students,

they taught their content and left, they did not feel like they were personally responsible for the student development. All of the students' work displayed in the bulletin boards belonged to elementary students. The middle school classes did not have any work displayed.

Despite all the technology available in the school, teachers did not use technology on a regular basis. At the most, they used black and white photocopies or text-based materials. Teachers stated that they were afraid that students would break the equipment. However, students were observed using the school laptops in one of the classes while two other students were playing with their own tablets. They were checking their social networking sites as a reward for having done their classwork. This happened in one of the most disruptive classes and students were handling the equipment with care.

Teachers looked really exhausted after classes, they dragged their feet to the teachers' room. In eight weeks, not a single middle school teacher came into the teachers' room with a positive story related to the classes they had taught. The conversations were all about how disruptive, abusing, condescending, and defiant the students were. Almost every week a teacher or a school administrator either cried or was visibly disturbed by something that a student or a group of students had done. One occasion, a teacher was eating his lunch in the teachers' room when a group of six middle school students came into the room to apologize for having disrupted his class. The teacher was very upset. He let the students apologize and then told them how he felt about what they had done. He said: "You made me feel like I am nothing, like what I am doing here is worth nothing - if you don't want to learn anything - you think this is not important - at least respect me as a person - as somebody who could be your father…" The students remained silent and then left giggling in a low tone. The teacher continued eating slowly and then left without saying another word to anybody.

Students.

Despite the fact that they live in a low-income community and the school says that students do not have family orientation or family support, most of the students were well fed, well groomed, good looking, and physically healthy. The school offered cooked and balanced food (breakfast, lunch, and afternoon snack), which included fresh fruit and milk every day. However, quite a few students brought food from home. This indicated that, at least some parents and guardians cared for the children under their care. The school community's generalized perception of lack of parental involvement could be a misconception caused by the catastrophization and overgeneralization associated with learned helplessness.

A small group of students was, indeed, disrespectful, defiant, and even violent. However, that represented a small group of middle school students. Teachers complained that the same individuals "terrorized" the school. They provoked other students by kicking their desks, pulling their hair, and throwing small objects on them to start a fight. When approached by the school inspector they denied that they had started the fight. They did not take responsibility for their actions and it was difficult to point out exactly who started the commotion. They were quick at starting a fight. Before teachers realized, they were already engaged in a fist fight. The researcher witnessed fights among children of every age, in the dining hall, in the classroom, and in the corridors. Once a third grade female student went into the computer room where the researcher was preparing for a workshop; she was crying because a male student in her class was trying to beat her. It might have been lunch time because the teacher was not in the classroom. The researcher tried to talk to the male student but he was determined to beat his colleague outside the school. When asked why he was angry at his classmate, the male student replied that the

female student was very boring. She annoyed him, so he needed to beat her. The researcher took both students to the principal's office and the deputy principal took over the case.

It is a reality that the students in this school lack basic social skills from an early age and get worse as they grow older. Bandura (1997) warns that low academic efficacy can have a negative impact on students as they grow up and start associating themselves with peers that can exert bad influence on their behavior. Elliot and Gresham (2008) and Gresham et al. (2010) state that there are two types of social skills deficits: The first one refers to acquisition deficits. This occurs when individuals do not know the difference between their actual behavior and the desired behavior or know the difference but do not know how or when to behave as expected. The second type of deficit, social skills performance deficit, occurs when individuals know how and when to behave in a certain way and choose to behave in a different way. The teachers believe that most students in this school do not know how to behave because they were not taught at home. Moreover, the environment outside the school does not model good behavior, respectful relationships, or value education.

In the classes observed, the most disruptive students were the ones who participated more actively and gave the right answers. Based on observational data, it is safe to state that most students in this school are more manageable than they are perceived by the school community. It is understandable that teachers have expectations for students' behaviors; however, in schools where the students lack basic social skills and do not perceive the relevance of education, schools need to complement their curricula to provide students with the skills they do not bring from home. The family and the school have the greatest impact and responsibility with children's cognitive, psychological, and social development.

Parents.

Both teachers and school officials stated that parental involvement in the school was almost inexistent. Parents only came to the school when they had something to complain about and some could not control their children anymore. However, almost every time the researcher was at the school, a mother or grandmother went to the school to talk to the administrators or teachers about a student. The school did not seem to have a system or a protocol in place to embrace the parents and instruct them on how to better deal with their children. They did not have a private location to talk to parents. Problems were discussed in front of other personnel or even in the presence of students in the corridors, in the teachers' room, or in the principal's office. Since parents only come to the school when there was a problem, some teachers demonstrated disgust when they were told that a parent wanted to see them. They made faces and dragged their feet to meet the parents.

Workshops.

All of the workshops happened as planned. We endured tropical rain, strike day, and student disruptions. Even teachers who were crying a few minutes before the beginning of a workshop attended it. The teachers and school staff helped with the resources. Apart from two occasions, the atmosphere during the workshops was always very positive and the rapport was great. The first occasion that caused tension between the researcher and the research team occurred when the researcher disclosed that she had visited another school in the company of a school board official. Some teachers were scared that the researcher would report what was discussed during the workshops to the school board. The researcher noticed the teachers' worries, talked openly about their concerns, reminded them of the research protocol, and avoided contact with the school board until the end of the research. The second incident occurred during

the reality testing experience. The researcher needed to show the teachers evidence of their low achievement. That hurt some of the participants, but as the process continued, they understood the dynamics of the exercise and the results were very positive. One of the school officials observing the reality testing process said:

> …this hook of self-evaluation from somebody who is outside the group - was very interesting - I think it is very interesting - and the group trusted you - and the group members really exposed themselves. The group was not afraid. This was very good because the people were really willing to speak out, they trusted you. Because at the time of the PPP (Political-Pedagogical Project- annual evaluation and planning), it is very difficult because - they are not silly, they are all teachers…nobody is naive here, so when it is time to do the PPP, the people protect themselves, they are afraid, they have each other's back. They don't want to be blamed for anything - and - with you that did not happen - the people said the truth - So much so that last week, when you challenged everybody's pride, there was a reaction - that did not go past them without affecting them - I don't know about the morning group - but - in the afternoon group, it hurt…And, this is a good thing - not a bad thing - I think if it had not affected them, that would have been bad (Tamires).

Class observation and lesson plans.

According to the teachers, the school board policies did not require that they developed comprehensive lesson plans. Some teachers used the curricula orientations that they received from the school board, distributed the content over the months, and used that as a guide. Other teachers wrote down the subjects and the activities they planned for the day, the week or the month. For the purpose of providing research data, teachers provided samples of the lesson plans that they had created prior to their participation in this study (Appendix Q). During the intervention, teachers developed a lesson plan based on the theories discussed in the workshops. The purpose of developing a common lesson plan was to create a template that teachers could use to operationalize the theories and ensure they incorporated elements to increase students' perceptions of utility of instruction, raise students' interest, foster engagement, and promote success (Appendices P & Q). The use of a common lesson plan could unify practices and give

teachers common grounds for evaluating results. The new lesson plan included the Nine Events of Instruction, the MUSIC Model of Motivation, and metacognitive regulation strategies.

Before the development of the lesson plan, teachers did not inform the class objectives to the students, they did not provide opportunities of independent practice, they did not provide feedback for performance, and did not assess learning after the activities. After the application of the new lesson plan, teachers reported positive impact of the elements of the lesson plan on the students' interest and learning outcomes. Assessment of learning was done by means of standardized exams provided by the school board. So, teachers' main concerns were related to teaching the content items that would be included in the exams:

> …the school board sends the exams… If they take the books (home), they (the books) never come back, so you need to work with the experiments because they will be part of the exams that the school board will send us, you have to teach the theory because everything that you explain must be registered in the students' notebooks… (Tatiana).

None of the middle school teachers developed complete lesson plans on a regular basis; most of them had the curriculum orientations as a guide or used a course book to decide which content to teach. On a subsequent class they followed from the page they stopped at in the previous class. Some others had a list with the topics they were planning to teach in that week or month:

> I noticed that the teacher's participation in planning a lesson with the objectives clearly stated, this was a wake-up call for me, because in your everyday practice you have your objectives in your mind, but you don't stop to write down your class objectives because you don't have time for that, but you have the objectives in your mind (Adriana).

The methodology used was traditional transmission one-to-many. The teacher basically presented content and left. There was very limited time for practice, if any; students displayed bad behavior when they were asked to practice or produce work. Some even destroyed the

materials the teachers were handing out, dropped the copies, and stepped on them pretending they had not seen it on the floor. There was hardly any teacher feedback or assessment of learning after activities. Teachers could cover very little content in each class and the level seemed lower than it should for the grade. Most teachers had difficulties starting the class and keeping students quiet during the course of a lesson.

The objective of the class observation was to give feedback to the teachers on the application of the new lesson plan. All of the focus team teachers were able to plan their lesson using the new template, incorporating the elements. However, due to the complexity of the metacognition concept, the metacognitive strategies were not fully implemented in the classroom:

> I think we learned, I think some parts were too fast, there are things that we have explored more, this conceptual thing of metacognition. I felt some difficulties when people wanted to make the lesson plan, not really in the planning activity but in the understanding of the metacognition but I understand it had to be fast because you ended up going through another path of self-evaluation. You worked with the school conditions… To explore everything this project would have to last a semester or a school year (Tamires).

Appendix P: Student Behavior Checklist

Cognitive Disconnect between efforts and outcomes	Behavior or language that indicates that students' expectations for failure are based on previous experiences. They do not perceive outcomes as consequences of their actions/efforts. They have a pessimist style. They display emotional and/or motivational deficits. They give up before trying. They give up at the minimum signs of difficulties or avoid challenges…	
	Examples of language that may denote helplessness I can't do it. I will not succeed I don't want to try it because I know I can't do it. I know I will fail. Nothing I know will help me do it. It's a waste of efforts and a waste of time. Why bother? I know I can't. I am so lame! I never do anything right.	**Examples of language that indicates effort/outcome connection** I can do it. I will succeed. I will try harder next time. What I already know can help me. If I work hard I get things right. Does it really depend on me? I will do it then? I can learn how to do it. With help I can do it and hard work, I can do it. I won't know if I don't try it!
Motivational Difficulties to start working, to focus, and to keep on track	The motivational deficit originates form their beliefs in the futility of their efforts. Why bother to try to do something when they believe that they will not succeed?	
	Examples of low engagement Delayed initiation of action. Procrastination to start work. Get distracted easily Little or no focus on work Divert attention with bad behavior Do not pay attention in what they need to do. Low resilience-give up easily. Try to find shortcuts. Incapacity to self-regulate. Do poor work just to finish it and do nothing else.	**Examples of high engagement** Respect to norms and regulations Stability of mood during task Increased interest in academic work Higher involvement Less depressive mood Fewer complaints Less disruptive behaviors More cooperation among students Less use of bad language Less bullying against high achieving students More positive comments about self and abilities Greater concerns about materials, tasks , results
Emotional Moody, passivity or aggressive behavior to disguise incapacity to perform	Emotional deficits can be either on the depressive or the disruptive side depending on the type of attributions for failure. Internal attributions may generate a more depressive mood, whereas external attributions may generated anger.	
	Examples of negative emotion Disgust for academic work. Disregard for education Disrespect of norms, transgressive behavior Change in mood, especially when asked to work Passive behavior, signs of depression, "lack of motivation", "lack of interest", "lack of perspective", sadness, constant complaints Aggressive or disruptive behavior Overt refusal to work or let others work Use of bad language Bullying towards higher achieving students Denigrating comments about themselves and their abilities Disregard for materials, tasks, results	**Examples of positive emotions** Respect to norms and regulations Stability of mood during task Increased interest in academic work Higher involvement Less depressive mood Fewer complaints Less disruptive behaviors More cooperation among students Less use of bad language Less bullying against high achieving students More positive comments about self and abilities Greater concerns about materials, tasks , results

This table was based on Bandura,1987; Dweck 1999; Kerr, 2001; Peterson, 1993; Sahoo, 2002

Based on the table above, observe the students' observe the general dynamics of your class and check the boxes below as to how many times during the week you observe any behavior that you would associate with a cognitive, motivational or emotional deficit.

Choose a different day each week and do not focus on individual students, try to grasp the totality of the class. Have this paper handy at all times during that day.

First observation (week 4 of the intervention)

Deficit	Write an "X" in the box as you identify the event. **Optional** If you have time and you remember the event write a short summary what happened and how you dealt with it. The letter and number in the box will help you go faster when you make your notes. Use them to identify which event you are describing. If you have too many events going on, you may want to describe only one, or two… Same for the next two observations.									
Cognitive	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
Motivational	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10
Emotional	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10
I can't tell which but I think this is a sign of helplessness	?1	?2	?3	?4	?5	?6	?7	?8	?9	?10

Second observation (week 5 of the intervention

Deficit	Write an "X" in the box as you identify the event.									
Cognitive	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
Motivational	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10
Emotional	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10
I can't tell which but I think this is a sign of helplessness	?1	?2	?3	?4	?5	?6	?7	?8	?9	?10

Third observation (week 6 of the intervention)

Deficit	Write an "X" in the box as you identify the event.									
Cognitive	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
Motivational	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10
Emotional	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10
I can't tell which but I think this is a sign of helplessness	?1	?2	?3	?4	?5	?6	?7	?8	?9	?10

Appendix Q: Elementary School Lesson plan before the intervention (Based on Framework by the school board)

Horário	OBJETIVOS	HABILIDADES	ETAPAS DA AULA	Desenvolvimento
			RODA DE CONVERSA ACOLHIDA	Oração – Músicas Contagem de roda
			ATIVIDADES INICIAIS – HORA DA CHAMADA Para realizar a chamada de maneira interessante, use músicas, rimas, jogos	Nomes: Qual o nome com maior nº de letras.
			ATIVIDADES INICIAIS – TEMPO CRONOLÓGICO E CLIMATEMPO	Calendário /
			ATIVIDADES INICIAIS – RODA DE LEITURA	-Criação
			APRESENTAÇÃO E REVISÃO DA ATIVIDADE DE CASA	Revisão das atividades 1/2/
10:00	Relacionar-se socialmente no espaço que vive	Identificar o espaço social	PRODUÇÃO DE TEXTO COLETIVA/ INDIVIDUAL	O que fizemos nas férias – Coletivo no quadro.
	O aluno ser capaz de identificar seu nome	O aluno reconhecer as letras do nome e do alfabeto	ATIVIDADE DE SISTEMATIZAÇÃO LEITURA/ ESCRITA	Livro didático página Nome da Gent (Ramos) nome dos amigos da turma pra Ligar nomes de personagens ~~histórias~~
	O aluno ser capaz compreender a ordem de st	Reconhecer o numeral, relacionar a quantidade	ATIVIDADE DE SISTEMATIZAÇÃO MATEMÁTICA	Registrando quantidades – ~~Retirada~~, ~~Adição~~ – Contando figuras/ Educação Cálculo mental jogo numérico
	Cooperação de bem estar social	Identificar as diferentes regras do convívio do grupo	ATIVIDADE DE SISTEMATIZAÇÃO ARTICULAÇÃO COM AS DIFERENTES ÁREAS DO CONHECIMENTO	~~Carnaval~~ – Regras de convívio
			RECUPERAÇÃO PARALELA	Atividades separando letras de númer
			RODA DE CONVERSA AVALIAÇÃO / ATIVIDADES PARA CASA	O que aprendemos. – Alfabeto tem 26 let ordem alfabética. Todo pessoa tem nome – Números 1 a 9

Appendix Q (Continued): Lesson Plan Using the New Template After the Intervention

Identificação da aula ou atividade					
Objetivos	Deixar o aluno identificar o texto: como se organiza e a utilidade do texto.	**Avaliação**	Montagem do Bilhete	**Apoio Extra**	Blocão

Eventos	Music	Mtgt	Descrição das atividades	Tempo	Materiais
Despertar atenção	I	Planejar	Roda de conversa sobre o tema onde mostramos este tipo de texto que já recebeu	5'	
Informar objetivos	U		Aprender como se faz um bilhete	5'	
Acessar base de conhecimentos anteriores	UI		Conversar sobre o tema através da leitura de imagem e texto impresso	5'	
Apresentar o conteúdo	U	Monitorar	Como se organiza o bilhete. Registrar no blocão	10'	
Oferecer apoio	C		Colocar o Blocão pendurado na sala de aula	2'	-Blocão
Criar oportunidades para prática	IMS		-Resolver as atividades propostas Recortar o nome e colocar no bilhete	30'	sala tem folha xerox
Oferecer feedback para o desempenho	MSC	Avaliar	-Recorte e colagem montando o Bilhete.		
Transferir conhecimentos para outros contextos	S		-Cuja o bilhete avisando que vai buscar na casa do colega (4)	15'	
Preview da próxima aula	I	Planejar	Trazer de casa algum tipo de bilhete		

Appendix R: Brochure designed, produced, and distributes by the School Board containing the regiment of the schools.

DIREITOS E DEVERES dos alunos

O Regimento Básico Escolar determina como direito dos alunos da rede municipal de ensino, além dos fixados pelo Estatuto da Criança e do Adolescente:

- Assistir às aulas e participar das demais **atividades pedagógicas escolares.**
- **Ser respeitado** em sua condição de ser humano e não sofrer qualquer forma de discriminação.
- **Ter ensino de qualidade, professores competentes e capacitados,** sempre atualizados em suas áreas de atuação.
- Ter oportunidade de ampliação de carga horária, com atividades garantidas através da **educação integral,** dos projetos, dos programas e das Unidades de Extensão.
- Ter assegurada a sua **participação na gestão democrática da escola.**

Para construir um ambiente democrático onde todos possam direitos assegurados, é preciso que cada aluno conheça e cu deveres. Abaixo, confira os deveres dos alunos, determin Regimento Escolar:

- **Não faltar nem chegar atrasado à escola,** participar das atividades pedagógicas escolares e permanecer na escola durante todo o horário estabelecido.
- Estar sempre **devidamente uniformizado.** No caso de ter que ir à escola sem uniforme, com justificativa fundamentada, deverá usar camiseta de manga curta ou comprida, dentro dos padrões de tamanho e comprimento do uniforme, e bermuda ou saia, dentro do esperado em estabelecimento escolar.
- Uma vez em sala de aula, **aguardar o professor.** E só sair de sala com autorização dele.
- **Informar imediatamente ao professor quando se sentir mal,** para que ele o encaminhe à secretaria, para que sejam tomadas as medidas necessárias.
- Colaborar para a pre **manutenção do prédio,** ário e de todo o material e infraestrutura necessário volvimento do trabalho p além das instalações de u
- Estabelecer uma **relação** com seus colegas, professo nários e demais repres comunidade escolar.
- Conhecer e cumprir o Básico da Rede Municipal
- **Fazer o dever de casa** pe professor e refazê-lo, se s
- Procurar o professor ou caso de falta nos dias d outras avaliações, **para e ter nova data marcada** com a necessidade. Na dade de fazê-lo, caberá sável adotar tal procedim