ARTICLES

Effective Schools in Inner-City Communities : Building Self-efficacy in the Cristo Rey Schools

(An Interim Report)

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Abstract

This is an interim report of a study examining the effectiveness of the Cristo Rey Network of Schools. The schools in this network are effective in educating socio-economically disadvantaged students through a curriculum that incorporates a corporate internship program. The hypothesis of the study is : "the longer students stay at Cristo Rey schools, the more their self-efficacy beliefs are increased, which leads them to pursue and persist in higher educational opportunities." This hypothesis will be examined by conducting surveys at the beginning and at the end of the academic year, from September 2007 to June 2008. The following report is based on the data obtained from the first survey conducted at St. Martin de Porres High School in Cleveland and De La Salle North Catholic High School in Portland in September 2007. The major findings tentatively supported the hypothesis and showed that the students' experiences in the corporate internship program positively influenced their academic performance. In this interim report, the entire data from the two high schools was dealt with as one sample group rather than delving into the differences between the two schools.

I. Introduction

The Cristo Rey Network of Schools consists of nineteen high schools located in urban areas in the United States. They are private schools that provide college preparatory education with a Catholic orientation. The Cristo Rey Network of Schools has some distinct characteristics. First, they recruit students exclusively from low-income families. The majority of students are from minority groups. Second, students are enrolled in a corporate internship program, in which students work one day a week (five days a month) at entry-level positions in local businesses. Their salary is applied to their school tuition. That enables students' families to pay for this expensive private college preparatory education. Third, more than 90 percent of Cristo Rey school graduates go on to college.

The Cristo Rey Network of Schools

Effective Schools in Inner-City Communities : Building Self-efficacy in the Cristo Rey Schools (An Interim Report)

started with one Jesuit high school in Chicago in 1996. The name of the school was Cristo Rey Jesuit High School, which the Network was named after. The high school was initially founded with the purpose of serving low income students in a predominantly Latino immigrant neighborhood on the Lower West Side of Chicago by providing college preparatory education. To develop an economically feasible model for the school and for low income families, the school incorporated a corporate internship program into the curriculum. For example, at Cristo Rey Jesuit High School, cost per student for the 2005-2006 school year was $9,225. Students earned an average of $6,625 each through the corporate internship program. Their families paid the remaining $2,600. Some families received scholarships to pay for this amount of $2,600 (Cristo Rey Network, 2007).

The Cristo Rey Jesuit High School proved its effectiveness by sending more than 90% of the graduates to college and by holding its dropout rate to a minimum, although it is located in a school district where dropout rates were as high as 50%. To replicate Cristo Rey Jesuit High School, the Cristo Rey Network of Schools was founded in 2001. In the same year, the second school in the Network was founded in Portland. In 2002, the third school was opened in Los Angeles. The fourth school was added in Denver in 2003. Recently the Network is growing more rapidly. Six more schools in 2004, two more schools in 2006, and seven more schools in 2007 were modeled after the Cristo Rey schools in the Network. Furthermore, three more schools are scheduled to open in Fall 2008 and feasibility studies are being conducted in four other cities. During the 2007-2008 school year, 4,234 students are enrolled in 19 Cristo Rey schools, 92% of the students are ethnic minorities, and the average family income of this year's 9th grade class is $33,766 (Cristo Rey Network, 2007).

The network receives grants and donations from foundations such as the Bill and Melinda Gates Foundation, and individual donors starting with philanthropists such as B. J. and Bebe Cassin. Given the impressive academic achievement of the Cristo Rey schools, the schools have been reported in the media (see Cristo Rey Network, 2007). The first book about Cristo Rey Jesuit High School was published in January 2008 (Kearney, 2008). However, no academic research on the Cristo Rey schools has been published as of January 2008.

This research was inspired by the positive impact that the Cristo Rey schools have on socio-economically disadvantaged students. The research framework was formulated to find out why the Cristo Rey schools work. For researchers and educators, it is a classic theme that social class and students' academic achievement level are correlated. In general, students from higher socio-economic background tend to have a high academic achievement level and students from lower socio-economic background tend to have a low academic achievement level. The question becomes how we can make educational opportunities more equitable among students regardless of their socio-economic background.

Researchers argue that there are sufficient good educational models "to build personal efficacy and cognitive competencies in disadvantaged youth" (Bandura, 1997, p. 22). However, such educational practice is not fully implemented, which presents the weakest link in the model of educational change.

Bandura argues that "a good model of implementation must provide effective strategies on how to reconcile conflicting interests, develop a common sense of mission and purpose, and mobilize community support for educational improvement" (ibid., pp. 22-23).

The purpose of this study, then, is to examine if the Cristo Rey Network of Schools can serve as a model of educational change that builds "personal efficacy and cognitive competencies in disadvantaged youth" (Bandura, 1997, p. 22). The focus of the study is this example of urban private schooling, its curriculum and instructional style, and the impact of its corporate internship program on its students. At this stage in the research, the Cristo Rey high schools are generally defined as private education that: (1)focuses on providing college preparatory education to socio-economically disadvantaged students; and (2)employs a corporate internship program requiring participation of all students. Wages earned from the corporate internship finance socio-economically disadvantaged students' access to this private education.

The central questions that this research asks are the following.

1. What elements of Cristo Rey schooling increase students' self-efficacy?
2. How do corporate internship experiences connect with academic learning?
3. What elements of Cristo Rey schooling have the most empowering effects on students from lower socio-economic backgrounds?

II. Theoretical Framework

II-A. Social class and schooling

The ways in which schooling relates to social class have been debated by many researchers. The underlying question is whether or not education functions as a social equalizer to help people move beyond the boundaries of their social class, or whether it reinforces existing class positions (Apple, 1978; Bowles and Gintis, 1976; Coleman et al., 1966). Researchers have repeatedly shown a strong correlation between educational achievement and social class that has held over time and across cultures (deMarris and Lecompte, 1999; Hurn, 1993; Kariya, 2002; Persell, 1977, 1993). Ronald Edmonds' argument on effective schools contrasts with the reproduction theory of education. He examined a number of public schools in the United States, and claimed that there exist effective schools where socio-economically disadvantaged students are educated to improve their academic achievement level that parallels or exceeds the level of socio-economically advantaged students (Edmonds, 1980; 1986). Such schools also have been researched in other countries such as Japan (Nabeshima, 2005).

The Cristo Rey Network of Schools can be viewed as effective schools: first, by accepting students exclusively from low-income families, which largely consist of minority groups; second, by providing them with expensive college preparatory education; and third, by sending more than 90 percent of them to colleges and universities.

Social class in relation to education is closely interrelated with ethnic background or gender. Social class is only one part of a person's identity, which cannot be separated from that person's ethnic background, and gender. Therefore, when our analysis involves any one of these three concepts, we will be paying attention to all three

variables, as Patricia Hill Collins advocated to use a "new category of analysis that is inclusive of race, class, and gender as distinctive yet interlocking structure of oppression" (Collins, 2001, p. 24).

There are a growing number of researchers incorporating feminist perspectives in research on education. Weiler (1988) looks at the lives and work of feminist teachers and administrators, revealing how feminists struggle against race, class, and gender discrimination that is being reproduced in the public schools. Weiler's claim moves beyond reproduction theory and explores how feminist resistance takes place in schools.

Schooling also functions as a mediator between social class and occupational outcomes. Some argue that education serves as a predictor of occupational outcomes when credentials are required in job acquisition (Collins, 1979). Others argue that social class matters more than education in predicting future occupational status (Bennett and LeCompte, 1990). When we add "gender" as a variable to social class and educational attainment, gender-role ideology serves as a significant predictor of women's occupational aspirations (Gaskell, 1973 ; 1994).

The Cristo Rey high schools combine education and work by incorporating corporate internship into the curriculum. The socio-economically disadvantaged students who enter Cristo Rey schools are exposed to the major corporate culture with a number of employees with higher socio-economic status. Therefore, this research deals with a school environment that has unique characteristics: consisting of socio-economically disadvantaged students only ; provided with private, college-preparatory education ; and at the same time exposed to a professional corporate culture. Students also gain work experience in those corporations, which include banks, hospitals, and law firms. The Cristo Rey Network of Schools have the basic conditions to challenge the theories of social class and schooling, so we focus our attention on what goes on inside the so-called "black box" into which students of a certain social class enter and from which emerge graduates with relatively high levels of educational attainment.

II-B. Self-efficacy and educational attainment

Albert Bandura (1997) argues that the crucial role educators can play is to increase students' self-efficacy beliefs, because such beliefs would increase their educational attainment. Perceived self-efficacy refers to "beliefs in one's capabilities to organize and execute courses of action required to manage prospective situations" (Bandura, 1997, p. 2). Numerous studies have been conducted, mainly in the field of psychology, to examine the correlation between a person's level of self-efficacy and his/her attainment. The stronger one's self-efficacy is, the more capable and successful one can be. According to Bandura :

> Efficacy beliefs influence how people think, feel, motivate themselves, and act. . . The findings of diverse causal tests, in which efficacy beliefs are systematically varied, are consistent in showing that such beliefs contribute significantly to human motivation and attainments (ibid., pp. 2-3).

Self-efficacy can be developed by four main factors : (1)mastery experiences, (2)vicarious experiences, (3)social persuasion, and (4)physiological and emotional

states. Mastery experiences are successful experiences of overcoming obstacles through sustained effort. Vicarious experiences refer to students seeing people similar to themselves (i.e., social models) succeed by perseverance. Social persuasion is verbal persuasion that people possess the capabilities to master given activities. Last, enhanced physiological status and positive moods are associated with a high sense of self-efficacy (ibid., pp. 3-5). All these factors contribute to building a belief in one's personal efficacy.

Evidence from various studies suggests that students' self-efficacy is positively correlated with students' choice of majors, success in course work, and perseverance in the field of study (Hackett & Betz, 1989 ; Lent, Brown, & Larkin, 1984). For example, Lent, Brown, and Larkin (1984) examined the relation of self-efficacy beliefs to college students' persistence and success in pursuing science and engineering college majors. Their findings indicate that a higher level of self-efficacy is correlated with higher grade performance. Furthermore, stronger self-efficacy was associated with longer persistence in technical/scientific majors. Their results did not show gender differences, suggesting that male and female students in their sample were comparable in their perceived self-efficacy in areas that have traditionally been male-dominated (ibid., p. 360).

Also, researchers report that the self-efficacy model is superior in predicting the choice of a mathematics-related college major and performance on a mathematics exam compared to other models such as mathematics aptitude or mathematics anxiety (i.e., Siegel, Galassi, and Ware, 1985). The study by Hackett and Betz supports the hypothesis that "mathematics-related self-efficacy expectations are stronger predictors of mathematics-related educational and career choices than mathematics performance or past mathematics achievement" (Hackett & Betz, 1989, p. 270).

These studies indicate that self-efficacy is more significant than actual academic ability. Given this correlation between the level of self-efficacy and academic performance, it is crucial for educators to focus on fostering a sense of self-efficacy for students to develop their full potential.

In the field of psychology, a number of studies indicate that women's perceived self-efficacy is positively correlated with their career choices. Hackett argues that for women who have to manage both occupational and domestic work, "multiple role efficacy" correlates with whether women "lower their aspirations and settle for a career that is 'good enough' or attempt to pursue more challenging careers" (Hackett, 1997, p. 238). Furthermore, Nevill and Schlecker (1988) argue that women are more likely to engage in nontraditional career activities when they are more assertive with stronger career decision-making efficacy.

III. Hypothesis

The Cristo Rey schools, which have been in existence for more than four years demonstrate that they are able to transform disadvantaged youth in inner city America into successful applicants to colleges and universities. To analyze the educational impact of Cristo Rey schools on students from low socio-economic backgrounds, this study formulates a hypothesis based on self-efficacy theory. Since the robustness of self-efficacy theory has been tested by numerous studies

during the past three decades, this study is not to test the theory. Rather this study applies the theory to explain the impact of Cristo Rey schooling on disadvantaged youth.

Based on the information gathered from my preliminary visits to the Cristo Rey schools, this study predicts that the educational environment together with the corporate internship program implemented at Cristo Rey schools provide the sources of self-efficacy beliefs to disadvantaged youth, turning them into successful applicants to colleges and universities.

As reviewed in the previous section, the first source of self-efficacy beliefs is mastery experiences or successful experiences. According to Bandura (1997), overcoming obstacles through persevering effort can give a person a resilient sense of efficacy. Students who are enrolled in the corporate internship program are expected to encounter various difficulties in their workplace. However, it is assumed that successfully completing their tasks and being appreciated by their colleagues and supervisors would give them a sense of accomplishment. Therefore, the corporate internship could result in providing students with mastery experiences.

The second source that would enhance self-efficacy beliefs is the vicarious experiences provided by social models. Students at Cristo Rey schools see other students successfully engaging in the corporate internship programs and almost all the senior students being admitted to colleges and universities. Seeing other students similar to themselves succeed in going to college by persevering effort "raises observers' beliefs that they, too, possess the capabilities to master comparable activities" (Bandura, 1997, p. 3).

The third source of self-efficacy beliefs is social persuasion. "People who are persuaded verbally that they possess the capabilities to master given activities are likely to mobilize greater effort and sustain it" (Bandura, 1997, p. 4). When a principal at a Cristo Rey school spoke to students who enrolled in the school in 2004, she addressed them, for example, "Good morning, class of 2008 and class of 2012," showing her expectation and belief that they all would be graduating from high school in four years and graduating from college in eight years. Another example is when a biology teacher, who used to teach at an elite private school, tells his students that he is treating the Cristo Rey school students in the same way as he used to treat elite students, indicating that the Cristo Rey school students have equal potential and capabilities with those elite students. According to self-efficacy theory, those verbal persuasions could lead students to try hard enough to succeed and promote their self-efficacy beliefs.

The fourth source of self-efficacy beliefs is physiological and emotional status. Positive physiological and emotional status enhance people's perceived self-efficacy (Bandura, 1997, pp. 4-5). There are some indications that daily practice at Cristo Rey schools results in enhancing students' physiological and emotional status. For example, students at Cristo Rey school in Cleveland have a daily advisory session and each student receives attention from teachers. Students are provided with breakfast, lunch, and a packed lunch on workdays at minimum cost. Students who need a wardrobe for work but cannot afford one are taken clothes-shopping by teachers with

donated money. All these caring support behaviors could contribute to enhancing students' physiological and emotional states, which can positively affect students' self-efficacy beliefs.

Based on these assumptions about the four sources of self-efficacy beliefs that could be generated at Cristo Rey schools, the hypothesis of this study is as follows : The longer students stay at Cristo Rey schools, the more their self-efficacy beliefs are increased, which leads them to pursue and persist in higher educational opportunities.

IV. Method

Participants and Procedure

To test the hypothesis, a survey questionnaire is being conducted among students of Cristo Rey schools twice : the first at the beginning of the academic year and the second at the end of the academic year. The first survey was conducted in September 2007. In this research, two Cristo Rey schools participated. One is St. Martin de Porres High School founded in 2004 in Cleveland, Ohio. The other is De La Salle North Catholic High School founded in 2001 in Portland, Oregon. The students all come from low-income families, and they all participate in the corporate internship program and study in the curriculum designed for college preparatory education. In 2005, 52 of 55 graduating seniors from De La Salle North Catholic High School went to college. St. Martin de Porres High School is expecting to send all of the first graduating class to college in 2008. In the downtown Cleveland area where this school is located, there are also five public schools, and the high-school-age cohort has a 30 percent chance of graduating from public high schools. Among the adult population in the area, only five percent have a college degree, and less than 50 percent have a high school degree. The teenage pregnancy rate is 49 percent. (Census data of 2000 cited by the president of St. Martin de Porres High School in an interview in September, 2005.)

Each student completed the questionnaire, which consisted of two parts. One part employed questions to measure the "general perceived self-efficacy scale (GSE)" developed by Matthis Jerusalem and Ralf Schwarzer (2007). The other part was designed to analyze school experiences, corporate internship experiences, and the linkage of the two. Students at St Martin de Porres High School filled in the questionnaire in the auditorium before they went to work. About one-fourth of the students go to work each day, and therefore it took four consecutive days to cover the entire student body. Each questionnaire was collected at the site. Though all students completed the first part of the questionnaire, some students did not have time to complete the second part. Students at De La Salle North Catholic High School completed the questionnaires in the classroom during the 30-minute reading period. Those who went to work that day completed the questionnaires on a different day during the same week. The questionnaires were all collected at the site.

At St. Martin de Porres High School, 261 students turned in the questionnaires : 90 freshmen, 77 sophomores, 56 juniors, and 38 seniors. At De La Salle North Catholic High School, 192 students submitted the questionnaires : 73 freshmen, 52 sophomores, 34 juniors, and 33 seniors.

Instruments

The General Perceived Self-Efficacy Scale

(*GSE*), (Jerusalem and Schwarzer, 2007) is a 10-item psychometric scale that is designed to assess self-belief for the purpose of coping with a variety of difficult demands in life. Students responded to each statement on a 4-point Likert scale ranging from "exactly true" (4) to "not at all true" (1). The maximum possible score is 40. In terms of the reliability of the GSE scale, Jerusalem and Schwarzer claim that in samples from 23 nations, Cronbach's alphas ranged from .76 to .90, with the majority in the high .80s.

Questions on school experiences, corporate internship experiences, and the connection between the two. These questions on school experiences, corporate internship experiences, and the linkage of the two were formulated based on observations made during my preliminary visit to both high schools in September 2005. Eleven questions ask about the students' school experiences. For nine of these questions, the students responded to each statement on a 9-point Likert scale ranging from the lowest degree (1) to the highest degree (9). Seven questions ask about their work experiences. Four questions are asked to evaluate if students see a connection between work and study. Bandura's four factors (1997) that develop self-efficacy are included among these questions,. For example, the students were asked to rate to what extent they thought their teachers believed in them (social persuasion); or to what extent their daily needs were met and supported in school (physiological and emotional states); or how much confidence they had in performing their job (mastery experiences); or if they had a role model (vicarious experiences).

V. Results of the First Survey

The hypothesis of this study was "the longer students stay at Cristo Rey schools, the more their self-efficacy beliefs are increased, which leads them to pursue and persist in higher educational opportunities." Examining the hypothesis with the first survey data alone, we can use the available data to analyze the relationship between students' self-efficacy and the students' grade level, instead of comparing the change in students' self-efficacy beliefs over time from the beginning to the end of the academic year. The overall correlation coefficient between self-efficacy and the students' grade level was .146 ($N=437$, $p<.01$), indicating a positive relationship, tentatively supporting the hypothesis of the study (See Table 1). Table 1 shows the other relationships among self-efficacy, confidence in being able to enter college, academic achievement level, confidence in achieving career goal, care and support from teachers and staff members, length of time spent studying at home, teachers' belief in students, daily needs supported in school, feeling appreciated at the workplace, and confidence in performing one's job. The correlation coefficients between scores of self-efficacy and all these scores ranged from .107 to .323. All correlation coefficients, except the one between self-efficacy and the length of time spent studying at home (significant at the .05 level), were significant at the .01 level.

Table 2 shows the average scores of self-efficacy broken down by grades, gender, ethnic groups, those who have and do not have career goals, those who have and do not have role models, and those who see and do not see the connection between work and study. In

self-efficacy scores, junior students showed the highest scores (31.88, n=91), followed by senior students (31.73, n=70), sophomore students (31.30, n=124), and freshmen (30.48, n=154). Comparing male and female students, female students showed a higher score (31.35, n=264) than male students (31.01, n=173). Students were divided into 12 different ethnic groups. Among the five groups with a sample size larger than 19, European Americans scored highest (31.58, n=103), followed by Mexican Americans (31.47, n=19), others who don't fit in the available categories (31.30, n=20), African Americans (31.16, n=210), and the multiracial group (30.86, n=58).

Furthermore, as shown in Table 2, the students who have career goals show a higher self-efficacy score (31.36, n=354) than the students who do not have career goals (30.38, n=80). The students who have role models showed a higher self-efficacy score (31.44, n=259) than the students who don't have role models (31.21, n=112). This is consistent with Bandura's theory (1997) that vicarious experiences through having role models can contribute in enhancing one's self-efficacy. The students who were able to see the connection between work and study showed a higher self-efficacy score (31.61, n=106) than the students who do not see the connection (31.26, n=273).

Table 3 summarizes the average scores on various indicators related to students' experiences at school and at their workplace. Various differences are observed among groups of different grades, gender, and students with or without career goals or role models, which will be discussed in the following section.

VI. Discussion Based on the First Survey

Relationships between self-efficacy and other factors (Table 1)

The relationships between self-efficacy and other factors are shown in Table 1. First of all, the students' grade level shows a positive correlation ($r=.146$, $N=439$, $p<.01$). This indicates that the longer students are enrolled at the Cristo Rey schools, the more students' self-efficacy beliefs are increased, tentatively supporting the hypothesis of this study.

As expected, the students with higher self-efficacy rated themselves higher on the scales asking their confidence in being able to enter college, their academic achievement level, their confidence in achieving their career goals, and their confidence in performing their job. Therefore, from an educational point of view, it is important to increase students' self-efficacy beliefs through schooling for their future success, as previous studies have indicated.

What is notable here is that the students with higher self-efficacy beliefs rated higher on the following three questions: if the teachers and staff members at school are caring and supportive; to what extent the students thought their teachers believed in them; and to what extent the students felt that their daily needs such as food, clothing, and secure feelings are met or supported in school. Among these three variables, the variable indicating if students' daily needs are supported in school shows the highest correlation coefficient with self-efficacy beliefs ($r=.197$, $N=427$, $p<.01$). In other words, when students feel that their daily needs are supported in school, the students are likely

to have higher self-efficacy, and are likely to do well both in school and at work.

This factor of the importance of supporting students' daily needs seems particular to the Cristo Rey Schools where students from only low-income families are enrolled. For students from middle-class families, their daily needs such as food, clothing, and secure feelings would be normally met and supported at home, and they would be able to focus on their schoolwork. It appears that for the Cristo Rey students, supporting their daily needs at school may be one of the basic conditions to overcome their disadvantageous socio-economic background for their improved academic performance.

Furthermore, the three variables discussed here, teachers' care and support, teachers' beliefs, and students' daily needs show positive correlations among each other (See Table 1; correlation coefficient .538, .468, .390 all at the .01 level). To analyze which of these three variables influence self-efficacy beliefs most, multiple regression analysis was conducted using self-efficacy as a dependent variable and the three variables as independent variables. The analysis shows that supporting students' daily needs is most significant at the .008 level, followed by teachers' care and support at the .111 level and teachers' belief in students at the .603 level. This confirms that the Cristo Rey students require school support for their daily needs and teachers' caring and supportive attitudes to enhance students' academic and career development.

Another factor particular to the Cristo Rey students is that their experience at the corporate internship program is positively influencing their self-efficacy beliefs. As shown in Table 1, students' self-efficacy beliefs are positively correlated with their feeling of being appreciated at the workplace (.161, n=395, p<.01) and with their confidence in performing their job (.323, n=395, p<.01). When these two independent variables were added to the three independent variables in the previous paragraph in conducting multiple regression analysis, students' confidence in performing their job appeared to be most significant in raising students' self-efficacy beliefs. This further confirms that at the Cristo Rey schools students' expriences in the corporate internship program is most significant in raising students' seif-efficacy beliefs, and that the increased self-efficacy beliefs contribute positively to influencing students' academic achievement levels.

Average scores of self-efficacy broken down by gender, ethnic groups, students with and without career goals or role models, and students who are able and unable to see connections between work and study (Table 2)

First, the average score of self-efficacy was examined according to different grades (See Table 2-a). Junior students show the highest score of 31.88 (maximum score 40.00) followed by senior students, 31.73, sophomore students, 31.30, and freshmen, 30.48. One interpretation of senior students' self-efficacy being lower than junior students' is that the senior students' anxiety about college entrance may be negatively affecting their self-efficacy beliefs. However, as students' grade advances, they spend a longer time studying at home as shown in Table 1 (correlation coefficient between the grade and the length of study is .143, N=445, p<.01) and Table 3.

Among the entire sample, female students constitute about 60 percent while male

students constitute about 40 percent. Female students show higher self-efficacy than male students (Table 2-b). The differences on other variables between male and female students will be discussed in the following section.

Table 2-c presents the average scores of self-efficacy of twelve different ethnic groups. Further analysis of different ethnic groups reveals interesting aspects that seem unique to the Cristo Rey schools. When we compare how the European American students (about one fourth of the entire student body) and the African American students (about one half of the entire student body) rated on the questions asking about their school and work experiences, it reveals that the African American students have more confidence than the European American students about entering college, doing well academically, achieving career goals, and in performing their job. In addition, they feel that the teachers are caring and supportive and believe in them more than the European American students do (Table 4). Though at this stage, the African American students have lower self-efficacy than the European American students and higher confidence in performing their job (which significantly correlates with self-efficacy beliefs), it may be too early to evaluate the difference between the two groups before analyzing further the development of their self-efficacy beliefs.

Table 2-d, Table 2-e, and Table 2-f compare the self-efficacy scores between students with and without career goals, and with and without role models, and the students who are able or unable to see the connection between work and study. The students who have career goals and role models and the students who see the connection between work and study all show higher self-efficacy beliefs than those who do not. The positive relation between self-efficacy and having role models supports Bandura's theory. However the causal relationships between self-efficacy and having career goals or ability to see the connection between work and study are not established at this stage, and it will require further analysis.

The fact that students who are able to see the connection between what they do in the corporate internship program and what they learn in the classroom seems to have significant implications at the Cristo Rey Schools. Table 5 compares the following scores between the students who see the connection between work and study and those who don't : the scores on confidence in being able to enter college ; academic achievement level ; confidence in achieving career goals ; length of time spent studying at home ; feeling appreciated at the workplace, and confidence in performing the job. The students who are able to see the connection between work and study score higher in all the variables mentioned above. This suggests that helping students see that what they study at school will improve their future career opportunities is likely to create a virtuous cycle of educational effectiveness.

Average scores on school experiences and corporate internship experiences (Table 3)

Table 3 compares various scores among different groups of students broken down by grade, gender, and those with and without career goals or role models. The variables examined here are : confidence in being able to enter college, academic achievement level, confidence in achieving career goals,

teachers' care and support at previous schools, teachers' care and support at Cristo Rey, length of study at home, school workload at previous school ; school workload at Cristo Rey ; teachers' belief in students, daily needs supported at school, feeling appreciated at the workplace, and confidence in performing the job.

An examination of students in different grades shows that their confidence in being able to enter college and their own estimate of academic achievement level decreases as they advance in grade. As mentioned earlier, this may be reflecting students' anxiety facing the actual process of applying to selective colleges and universities. On the other hand, students' confidence in performing their job increases as they accumulate experiences, and senior students have the highest confidence in performing their job. This parallels the higher self-efficacy beliefs of junior and senior students. As discussed earlier students' confidence in performing their job is the strongest indicator that positively influences their self-efficacy beliefs.

Comparing the Cristo Rey schools and previous schools, students agree that the teachers and the staff members at the Cristo Rey schools are more caring and supportive, and the workload at Cristo Rey is more demanding. However, female students evaluate their previous schools differently from male students. In other words, compared to male students, female students felt that the teachers and the staff members at their previous schools were much less caring and less supportive, and they thought the workload at their previous school was far less demanding (See Table 3). It may be that female students feel more cared for, supported, and believed in by the teachers at the Cristo Rey schools than male students do, and that this is raising their self-efficacy score higher than that of male students. On the other hand, male students have slightly higher scores than female students of feeling appreciated at their workplace and confidence in performing their job.

The students who do not have career goals seem to show certain traits compared to those who have career goals. First, 28 percent of male students do not have career goals while 12 percent of female students do not have career goals. Second, the differences between previous schools and the Cristo Rey schools in terms of how students perceive teachers' care and support and school workload are smaller among those without career goals. It indicates that the students without career goals may be unable to perceive positive messages sent by the school or unable to take schoolwork more seriously, while the students with career goals highly appreciate the caring and supportive environment of the Cristo Rey schools and consider the schoolwork at Cristo Rey as highly challenging. Table 3 also shows that students who have role models score higher than those who do not in all the variables.

In the questionnaire, students were asked what kind of daily habits they have acquired through the corporate internship program. They were instructed to choose as many as were applicable. Those habits were, in the order of most frequently to least frequently mentioned, as follows : to be responsible (245), to listen attentively (212), to pay attention to details (210), to be on time (203), good manners (173), to concentrate (161), adjusting to different environments (159), to speak clearly (143), inter-personal skills (107), and to plan ahead (71). Then

they were asked which three of those habits were applicable to their classroom behavior. Those mentioned were, in the order of frequency : to be on time (246), to be responsible (213), to listen attentively (190), to pay attention to details (143), to concentrate (138), good manners (94), to speak clearly (93), to plan ahead (76), adjusting to different environments (54), and inter-personal skills (52). This result suggests that a corporate internship program is likely to train students to be responsible and attentive in the classroom. However, only 27 percent of the students agreed that some aspects or contents of their work relate to the subjects they study in the classroom. Among those who agreed, 57 percent answered that they felt like studying more about those subjects.

VII. Conclusions

The major findings of the first survey tentatively supported the hypothesis of the study, which was "the longer students stay at Cristo Rey schools, the more their self-efficacy beliefs are increased, which leads them to pursue and persist in higher educational opportunities." The analysis showed that the major contributing factors in enhancing students' self-efficacy beliefs were, first, their experience and their increased confidence in performing their job in the professional business world, and second, their perceptions of being strongly believed in, and well taken care of in school. The students at age 14 start getting acculturated to the behavioral patterns of successful people through the corporate internship program, and their disadvantageous living conditions at home are compensated for by the caring and supportive environment at school. This hypothesis indicates that the Cristo Rey schools are effective in empowering socio-economically disadvantaged youth because the Cristo Rey model can create the virtuous cycle of personal development by increasing one's belief in achieving his/her goals.

VIII. Implications

In the Cristo Rey schools, the corporate internship program may have been initially incorporated into the curriculum for financial reasons so that students from low income families can finance their own education by working part-time. However, analysis of the data reveals that corporate internship experiences closely and positively connect with students' academic achievement. As discussed in the above section, the corporate internship program not only provides students from low-income families with the means to receive a college preparatory education, but also trains students to become responsible and attentive in the classroom. It is because they acquire behavioral habits such as responsibility, attentiveness, and concentration through work by seeing and experiencing how professional people normally behave, that they apply and practice those behavioral habits in the classroom. Thus, a corporate internship program serves as one of the main factors in making Cristo Rey schooling more effective.

From an educational point of view, given that the students who are able to see the connection between work and study are likely to do well both at work and school, it is advisable that school teachers help students to understand how what they study in the classroom relates to their future career and that further study would enhance their career opportunities.

This study also reveals that the caring

and supportive environment of the Cristo Rey schools has empowering effects on students from lower socio-economic backgrounds. Especially due to their disadvantaged family background, it becomes critical to pay attention to and fulfill students' needs such as food, clothing, and secure feelings, which results in enhancing students' self-efficacy beliefs. Further analysis suggests that female students at the Cristo Rey schools, compared to male students, are more receptive to the school environment and are likely to do better in the caring and supportive environment and also when they feel that teachers believe in them.

In addition to the nineteen schools in the Cristo Rey Network at present, more schools are scheduled to open next year in other metropolitan areas. The network is growing rapidly because educators and people in the community see the Cristo Rey schools' effects on socio-economically disadvantaged youth. We may have to wait several more years to see the impact on social change made by the graduates of the Cristo Rey schools, but the whole endeavor will be sustained only when the visionary school leaders, mission-driven teachers and staff members, local corporations, and communities work together towards their common goal.

* This paper is based on the research framework published as "The Cristo Rey Network of Schools : Educational Innovation for

Table 1. Correlation coefficient between self-efficacy and other variables

	self-efficacy	grade	confidence in being able to enter college	academic achievement level	confidence in achieving career goals	care and support given at Cristo Rey	time spent studying at home	teachers' beliefs in students	daily needs supported in school	feeling appreciated at the workplace	confidence in performing the job
self-efficacy N= 439	1	0.146**	0.299**	0.254**	0.241**	0.165**	0.107*	0.151**	0.197**	0.161**	0.323**
grade N= 439	0.146**	1	-0.059	-0.104*	0.029	0.065	0.143**	0.009	-0.037	0.051	0.110*
confidence in being able to enter college N= 435	0.299**	-0.059	1	0.339**	0.449**	0.153**	0.133**	0.248**	0.182**	0.227**	0.233**
academic achievement level N= 436	0.254**	-0.104*	0.399**	1	0.348**	0.142**	0.108*	0.274**	0.216**	0.127*	0.246**
confidence in achieving career goals N= 378	0.241**	0.029	0.449**	0.348**	1	0.229**	0.159**	0.340**	0.281**	0.327**	0.445**
care and support given at Cristo Rey N= 435	0.165**	0.065	0.153**	0.142**	0.229**	1	0.121*	0.538**	0.390**	0.289**	0.252**
time spent studying at home N= 433	0.107*	0.143**	0.133**	0.108*	0.159**	0.121*	1	0.087	0.035	0.109*	0.076
teachers' beliefs in students N= 425	0.151**	0.009	0.248**	0.274**	0.340**	0.538**	0.087	1	0.468**	0.339**	0.347**
daily needs supported in school N= 427	0.197**	-0.037	0.182**	0.216**	0.281**	0.390**	0.035	0.468**	1	0.346**	0.319**
feeling appreciated at the workplace N= 395	0.161**	0.051	0.227**	0.127*	0.327**	0.289**	0.109*	0.339**	0.346**	1	0.548**
confidence in performing the job N= 395	0.323**	0.110*	0.233**	0.246**	0.445**	0.252**	0.076	0.347**	0.319**	0.548**	1

Person's Correlation Coefficient, *p< .05 ; **p< .01

Social Equity in Ethnically Diverse America (A Research Framework)" (Miyake, 2006). Sections I Introduction, II Theoretical Framework, and III Hypothesis were adopted from this research note and slightly modified.

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Table 2. Average Score of Sel-Efficacy

Table 2 - a

	Average	Sample size	Percentage
Freshman	30.48	154	34.27
Sophomore	31.30	124	28.33
Junior	31.88	91	21.18
Senior	31.73	70	16.22
Total	31.20	439	100.00

Table 2 - b

	Average	Sample size	Percentage
Male	31.01	173	39.33
Female	31.35	264	60.67
Total	31.21	437	100.00

Table 2 - c

	Average	Sample size	Percentage
American Indian	32.67	6	1.44
Mexican American	31.47	19	4.40
Latin American	29.88	8	1.76
European American	31.58	103	23.96
African American	31.16	210	48.20
Chinese American	29.50	2	0.43
Japanese American	30.50	2	0.45
Philipino/a American	25.00	1	0.18
Island Puerto Rican	28.00	1	0.21
U.S. Puerto Rican	31.40	5	1.16
Other	31.30	20	4.61
Multiracial	30.86	58	13.19
Total	31.21	435	100.00

Table 2 - d

	Average	Sample size	Percentage
With career goal	31.36	354	82.04
Without career goal	30.38	80	17.96
Total	31.18	434	100.00

Table 2-e

	Average	Sample size	Percentage
With role model	31.44	259	69.96
Without role model	31.21	112	30.04
Total	31.37	371	100.00

Table 2-f

	Average	Sample size	Percentage
See connection between work and study	31.61	106	28.20
Unable to see connection between work and study	31.26	273	71.80
Total	31.36	379	100.00

Table 3. Average scores on school experiences and corporate internship experiences

		confidence in being able to enter college	academic achievement level	confidence in achieving career goals	care and support given at previous schools	care and support given at Cristo Rey	time spent studying at home	study workload at previous schools	school workload at Cristo Rey	teachers' belief in students	daily news are met and supported in school	feeling appreciated at the workplace	confidence in performing the job
Freshman	Average n= 159	7.47	7.21	7.96	6.72	7.69	2.16	5.97	7.60	7.78	7.32	7.32	7.66
Sophomore	Average n= 126	7.63	7.03	8.05	7.29	7.98	2.41	6.45	7.79	7.93	7.66	7.88	7.99
Junior	Average n= 92	7.54	6.97	8.09	6.93	7.91	2.43	5.64	7.80	7.90	7.13	7.54	8.05
Senior	Average n= 70	7.10	6.84	8.02	7.35	7.91	2.67	6.19	7.84	7.78	7.28	7.60	8.07
Total	Average N= 447	7.47	7.05	8.02	7.03	7.85	2.37	6.07	7.73	7.85	7.37	7.57	7.90
Male	Average n= 177	7.44	6.94	7.88	7.22	7.65	2.18	6.39	7.66	7.69	7.31	7.63	7.92
Female	Average n= 268	7.50	7.15	8.10	6.92	7.98	2.50	5.85	7.78	7.95	7.40	7.53	7.89
Total	Average N= 445	7.47	7.06	8.02	7.04	7.85	2.37	6.07	7.73	7.85	7.37	7.57	7.90
With career goal	Average n= 362	7.56	7.07	8.06	6.95	7.90	2.39	6.04	7.82	7.91	7.44	7.58	7.94
Without career goal	Average n= 81	7.01	6.96	7.48	7.31	7.67	2.28	6.20	7.37	7.62	7.09	7.49	7.71
Total	Average N= 443	7.46	7.05	8.02	7.02	7.86	2.37	6.07	7.74	7.86	7.38	7.56	7.90
With role model	Average n= 263	7.59	7.10	8.11	7.23	7.95	2.47	6.15	7.85	7.90	7.52	7.69	8.01
Without role model	Average n= 113	7.22	7.07	7.94	6.69	7.64	2.31	6.09	7.36	7.73	7.05	7.37	7.79
Total	Average N= 376	7.48	7.09	8.07	7.07	7.86	2.42	6.13	7.70	7.85	7.38	7.59	7.94

Table 4. Differences between European American Students and African American Students in School and Work Experiences

		confidence in being able to enter college	academic achievement level	confidence in achieving career goals	care and support given at previous schools	care and support given at Cristo Rey	time spent studying at home	study workload at previous schools	school workload at Cristo Rey	teachers' belief in students	daily pass are met and supported in school	feeling appreciated at the workplace	confidence in performing the job
European American Students	Average Score	7.06	6.96	7.81	7.18	7.76	2.31	5.79	7.31	7.83	7.41	7.59	7.78
	Sample Size	105	105	79	104	105	105	105	105	103	105	102	104
African American Students	Average Score	7.51	7.05	8.07	6.87	7.93	2.24	6.13	7.91	7.97	7.41	7.59	7.99
	Sample Size	213	212	200	210	212	212	211	211	207	207	184	181
Total	Average score	7.49	7.06	8.03	7.03	7.85	2.37	6.07	7.73	7.84	7.37	7.58	7.91
	Sample Size	443	444	385	436	443	441	441	440	434	436	404	403

Table 5. Differences between students who are able or unable to see the connection between work and study

		confidence in being able to enter college	academic achievement level	confidence in achieving career goals	time spent studying at home	feeling appreciated at the workplace	confidence in performing the job
See connection between work and study	Average Score	7.50	7.16	8.18	2.68	7.91	8.10
	Sample Size	108	108	97	108	108	108
Unable to see connection	Average Score	7.45	7.02	7.99	2.32	7.42	7.86
	Sample Size	277	279	236	278	278	280
Total	Average score	7.46	7.06	8.04	2.42	7.56	7.93
	Sample Size	385	387	333	386	386	388

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