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Goal Effectiveness in Achieving Educational Outcomes: Experimental Evidence from 9th Graders in Medellin, Colombia

Keywords: Field Experiment, Goal Setting, Incentives, Self-Help Groups

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Abstract: Does goal setting among low-income ninth graders leads to higher average goal achievements of educational outcomes? This question is explored by a field experiment motivated by the acknowledged California-based Family Independence Initiative (FII), to analyze the effectiveness of individual goal setting, incentives and self-help groups on the achievement of educational goals. By randomizing treatments and control with the cooperation of the Secretary of Education in Medellin, different classrooms were assigned to five different experimental groups that met systematically for five months. The results show that goal setting is a cost-effective method to help low-income students achieve educational outcomes. Setting a goal significantly increases a subject's probability of achieving the task set out in the goal. Combining this with incentives and self-help groups is the most effective approach, with an increase in the likelihood of achieving an educational goal by 41% compared to setting a goal alone. Increased goal achievement leads to a higher academic performance through a higher average grade.

1. Introduction

The World Bank has recognized education as an essential part of eradicating poverty since 1962. Disadvantaged children can easily get discouraged, and dropout rates increase in the last years of high school due to the opportunity cost of working and a similar average wage for students across grades. Demotivated students will not be able to take up future opportunities and society will therefore bypass their potential contribution and talents. Much literature has investigated school attainment and children's performance due to the Millennium Development Goals (MDG, all children in school by 2015). More specifically, past studies have focused on finding efficient ways of lowering the opportunity cost of going to school by increasing school retention and enrollment for children living in poverty. Although this is a common goal, there is still controversy over the most efficient way to achieve it (Duflo et al. 2013).

Low-income children face both external and internal barriers to accessing schools and thriving in educational settings. External impediments include distance from school, cost of uniforms, tuition, and the opportunity cost of missed labor. The internal barriers, which are more difficult to observe, can equally deter children's process of human capital accumulation. Children living in poverty face many obstacles that expose them to significant physical and mental risks. Non-cognitive traits such as grit, self-esteem, and self-efficacy have been recognized as important determinants of systematic school dropout and absenteeism even in presence of free schooling (Heckman et al. 1999, 2001). Child sponsorships are found to have large impacts on children's aspirations, level of happiness, self-efficacy and hopefulness (Glewwe et al. 2014). This demonstrates the importance of overcoming both external and internal constraints to education.

The Family Independence Initiative is an approach that employs goal setting, incentive schedules and self-help groups to alleviate poverty. Maurice Lim Miller won the 2012 McArthur Genius Award for developing the approach. It has shown remarkable results in the United States and through replications across numerous cities. The model is built on the principle that individuals can lift themselves out of poverty by changing their attitudes and behavior, along with accumulating social capital in a more efficient way. The success of the model has in addition lead to research on its functioning in a scientific matter through a field experiment with micro entrepreneurs in Medellin, Colombia (Aguinaga et al. 2016).

The purpose of this study is to investigate the efficiency of goal setting, which can lead to higher accomplishment of relevant goals for students in ninth grade. This grade is particularly significant due to it being the final grade of basic secondary education in Colombia. After

passing ninth grade, students choose different “tracks” to pursue in mid-secondary. Goal setting can potentially direct students’ behavior from inefficient time use to behavior improving academic performance. Changing social behavior is a new prosperous area of research. By moving behavior away from things like procrastination to beneficial tasks, participants can achieve increased individual welfare and accomplishments profiting them later.

Students in the study are randomly selected into different treatments where they are either setting goals, receiving either a conditional or unconditional incentive, participating in self-help groups, combining the three components or partaking in a control group. The results show that goal setting is a cost-effective approach for low-income students to achieve educational outcomes. The most effective treatment on goal achievement combines goals with a conditional incentive and participating in a self-help group. Additionally, students with higher goal achievement tend to perform better academically as measured by higher average grades compared to their classmates.

Section 2 covers a review of the relevant literature. Section 3 describes the experimental design and the subject pool. Section 4 shows the model and hypothesis. Section 5 covers the empirical method used in data analysis and presents the results of the different treatments, section 6 concludes.

2. Literature Review

2.1. Human Capital

Investing in education is considered an important and profitable investment in economic research today. Primary education has become the number one investment priority in developing countries. The returns to education decline by the level of schooling and the per capita income of a country. In addition, educational investments can bridge the gender gap due to them being more profitable for women than for men (Psacharopoulos 1994). There are still controversies over the different methods and the creation of human capital through different investments in skills.

Human capital is defined in the Oxford English Dictionary as “the skills the labor force possesses and is regarded as a resource or asset.” It increases an individual’s productivity by investing in various skills as education, health and training. The definition of education as an investment in human capital and its importance for the future income of individuals is well recognized in economic literature (Becker 1962). Investments in the young are worth more than investments in older populations. This is due to the time constraint on the older

compared to the younger. Another contribution is that human capital has fundamental dynamic complementarity features. The achievement of skills generates an ability to achieve new skills. Mincer (1974) use the framework of an aggregate production function to show that growth in human capital is both a condition and a consequence of economic growth. Duflo (2000) finds a program constructing primary schools in Indonesia lead to an increase in education and earnings with economic returns of the education ranging between 6.8 to 10.6 percent. Despite all the benefits of investing in human capital, many students do not continue their schooling.

2.2. Why students do not continue their schooling

A large part of the literature has emphasized the power of cognitive skills and their relation to individual earnings, distribution of income and economic growth. Both minimal and high level skills are important and there is a complementarity between skills and quality of economic institutions. A big change in schooling institutions in developing countries could close the existing economic gap with developed countries (Hanushek & Woessmann 2008). Other authors confirm this approach by reinforcing the research on learning as a bolster of more learning (Heckman 2000). Heckman emphasizes the potential importance of other externalities such as family and neighborhood. These externalities and unknown factors are considered throughout the literature as the key to understanding why we observe a lack of commitment and investment in education despite all its found benefits. One of the most profitable investments in human capital found throughout the literature, are in low-income children.

2.2.1 Why invest in low-income children?

Research has begun to focus more and more on skill formation and on the benefits of investing in low-income children. The literature in economics and psychology has specifically focused on how to create good and sound social policies toward early childhood education. Some of its findings are that skill formation is influenced by an interaction of genetics and individual experiences. The achievement of skills is essential for economic success and built upon already existing foundations. There is an interdependence between cognitive, linguistic, social and emotional competencies shaped by experiences, which are constructed in predictable sequences of sensitive periods (Heckman 2006). The environment of the child is pointed out as crucial for the development of cognitive and noncognitive skills. This can thus put a child in a disadvantaged position compared to others due to the lack of stimulation of these skills and is not only explained by the financial constraints of households. These low-

income children are predicted to perform worse later on different social and economic measures. This can be avoided by improving both cognitive and noncognitive skills.

2.2.2 Childhood Interventions improves cognitive and noncognitive skills

While much more attention has been paid to cognitive skills, recent research suggests that non-cognitive skills are equally important. Heckman (2001) attributes the success later in life due to early childhood interventions helping the development of noncognitive skills. Multiple policies, such as the No Child Left Behind Act, measure future achievement based on test scores, which do not capture important traits like motivation, perseverance and tenacity. There are higher returns of investment in disadvantaged children compared to other approaches to get the disadvantaged in position to be a productive member of society. Current policies overinvest in improving skills at later ages and do not take sufficiently into account the importance of noncognitive skills. Interventions improving these skills among the disadvantaged is proven beneficial and is potentially key in cultivating abilities allowing individuals the opportunity to economic success.

Heckman and Rubinstein explore the significance of these noncognitive skills by looking at evidence from the General Educational Development (GED) testing program (2001). The authors ratify that current systems of evaluating educational reforms by using test scores are not capturing many of the skills necessary to achieve economic prosperity. A more comprehensive evaluation would better capture the noncognitive skills, which are highly valued in the job market. The effectiveness of the learning in Catholic schools by enhancing motivation and self-discipline is an example of this (Coleman & Hoffer 1983). Both cognitive and noncognitive skills are important determinants of social and economic success. This challenges a view in the literature that personal achievement is mainly explained by cognitive skills. Non-cognitive skills might be a cost effective way to improve outcomes compared to the cost of changing cognitive skills (Heckman 2006). In addition to this, there is some evidence of these non-cognitive skills affecting various behaviors differently by gender. This can therefore lead to different outcomes for males and females, and is a possible way to decrease the gender gap. The literature has recently focused on the potential benefits of using goal-setting theory as a cost-effective method to improve educational outcomes.

2.3. Goal-Setting Theory

Goal-setting theory occurred first in psychology and began as a theory of motivation. The approach has been developed over the last 25 years in psychology and has displayed positive outcomes in various situations around the world (Locke & Latham 1990, 2002). Goal-

setting theory finds a strong relationship between goals, self-satisfaction, and performance. The literature demonstrates how high goals lead to higher levels of task performance than vague or easy goals. There is a positive linear relationship between goal difficulty and task performance (Hollensbe & Guthrie 2000). The theory assumes that individuals value future outcomes because of discontent with one's present condition and a desire to attain an improved outcome. Locke & Latham (2006) affirms that goals direct effort and action from non-relevant actions towards relevant actions. Effect of goals on performance is dependent upon self-efficacy, feedback and situational constraints. Furthermore, goals can lead individuals to use their existing abilities and provide motivation to acquire knowledge. There is an initial problem, however due to demotivation because goals which are too highly perceived. Having sub-goals creates a promising solution and an area for future research.

2.3.1 Explaining Goals using Prospect Theory

Empirical results on the setting of goals can be explained using the value function of Prospect Theory and employs three principles (Heath et al. 1999, Kahneman & Tversky 1979). Goals are reference points with loss aversion and diminishing sensitivity. The reference point divides the space of outcomes into a positive and a negative region. This demonstrates how individuals react to different performances, successes and failures. Loss aversion implies that, if people fall short of their goal, they feel more pain than they would feel pleasure if they surpassed the goal by the equivalent amount. Diminishing sensitivity predicts that goals will affect effort differently, depending if they are above or below their goal. Together these three principles gives a better understanding on how goal setting affects performance.

2.3.2 Goals and Educational Outcomes

The positive outcomes of goal-setting theory and new theories have recently been focused on educational outcomes. Growth goals and indirect goals have a strong impact on academic achievement and other outcomes (Locke et al. 2015). By participating in a learning-to-learn program, students improve academic achievements by self-selecting academic and non-academic goals (Acee et al. 2012). Goal-setting programs are quick, effective and inexpensive for students experiencing academic difficulty. MBA students enhanced academic performance by setting proximal and distal learning goals compared to student who did not (Latham & Brown 2006). Clear goals can make students better able to avoid procrastinating or being distracted with other activities (Kruglanski et al. 2002). The students can thus improve academic performance significantly compared to control groups (Morisano et al. 2010). These studies show the potential effectiveness of goal-setting activities, but the

effectiveness has yet to be tested in developing countries. The Family Independence Initiative (FII), which this research is inspired by, combines goal setting with self-help groups and incentives.

2.4. Incentives

2.4.1 Incentives as Conditional Cash Transfers (CCTs)

One of the more researched approaches in the Family Independence Initiative (FII) model is incentives. It has been explored both through conditional and unconditional cash transfers. The endless discussion on the externalities and negative spillover effects of the conditional cash transfer (CCT) programs, gives motivation to explore the field of other methods to improve human capital. The literature on different designs suggests that multiple CCT designs function well, therefore authors explore which design is the most beneficial for increasing attendance and enrollment rates (Barrera-Osorio et al. 2011). *Familias en Acción* seems to have a positive effect on school attainment, but there is no significant effect on test scores of the participants (Baez & Camacho 2011). Other literature investigates the substitutability of child labor and of the child being in school. Research finds that the *Familias en Acción* program increases enrollment. It is the most efficient in rural areas and with young children (Attanasio et al. 2010, 2015). The CCT's can create virtuous circles by creating new motivation for the participants. In countries like Brazil and Mexico, the CCT's has created a demand for more quality in education (Estevan et al. 2013). The literature also finds that *Familias en Acción* has a positive effect on social capital.

2.4.2 The Effectiveness of Different Incentives

There are positive effects of financial rewards throughout recent literature. A randomized evaluation of a scholarship program for girls in Kenya shows both gains in attendance and exam scores (Kremer et al. 2009). There are inconsistent findings on the efficiencies of different framings and the efficiency on different subjects. Using rewards on student inputs such as attendance, books read and homework completion is a more efficient conditional incentive for students than basing the incentives on the outcome of interest to improve academic outcomes (Fryer 2010). Small repeated goals are preferred to achieve educational objectives in the experimental design. Strong effects on girls, but no effect on boys was found in a randomized trial in Israel to increase certification rates using cash incentives with low-achievers (Angrist et al. 2009). A low-performing school district in Chicago took part in a randomized field experiment to investigate the effect of performance-based incentives among ninth graders (Levitt et al. 2016). The authors apply four different designs of the

incentives to find the most efficient treatment, a fixed rate or lottery structure and the recipient of the reward (student or parent). They find large effects on students at the threshold of meeting the achievement standard and this effect continues one year after the program, but fades away in the long term.

A large randomized experiment in Morocco finds that educational labeled cash transfers to fathers of school-aged children in rural areas, without any requirements of improved attendance among the students, can achieve large gains in school participation. The program increased the parent's belief that investing in education is worthwhile and a likely pathway of the results (Benhassine et al. 2015). Incentives are found to have high effects on the achievements of high-ability undergraduate students in a randomized field experiment, but negative effects on low-ability students (Leuven et al. 2010). Contrary to this, a randomized experiment in Italy examining the impact of low and high incentives find no effect on low-ability students (De Paola et al. 2012).

Several studies have investigated the effectiveness of different approaches to improve educational outcomes as an investment in human capital. Recent literature rejects the single crossing property in signaling theory and new theory differentiate between cognitive and noncognitive skills. The literature on labor markets assume a single hidden skill, which can be in parts revealed by tests or the choices of individuals. A mixed signal of information on both the cognitive and noncognitive skills seems to be a more accurate assumption. This distinction is important in evaluating the effectiveness of early child interventions and noncognitive skills can be as important as cognitive skills in determining future economic success. The newly found relevance of these noncognitive skills has, therefore, been researched more frequently and can be a cost-effective approach to improve a set of abilities central for achieving higher wages.

In developing countries, some research has been conducted on goal-setting theory, but not on the achievement of educational outcomes. Our study follow the approach of Aguinaga et al. (2016), by applying the FII model on disadvantaged youth in Medellin. The model combines three different approaches into an experimental model using goal setting, incentives and self-help groups. The literature illustrates the importance of using these economic models in developing countries to improve our understanding of how approaches as goal-setting theory can help students achieve educational outcomes and, if successful have huge policy implications for programs that focus on education and economic growth.

3. Experimental Design

3.1 Background and Subject pool

Colombia is considered by the World Bank to be an upper middle-income country and Medellin is the country's second largest city. Despite recent economic growth, the city still faces great challenges with inequality. The Gini coefficient has recently increased from 0.506 to 0.526, a 4% increase (Medellin Comovamos 2014) which portrays a problem with highly unequal income distribution common throughout Latin America.

The project was implemented in collaboration with our research team and the Secretary of Education in the Department of Antioquia between July and November of 2016. The program was introduced to ninth graders in consideration of their problems with high dropout rates and low attendance rates, in randomly selected low economic strata schools. Strata is the official indicator in the urban areas of Colombia to measure households' socioeconomic conditions, ranging from 1 (poorest household) to 6 (richest household). A vast majority of students in the schools were in Strata 1 and Strata 2. The schools were situated in different impoverished areas on the outskirts of the city. Struggling with limited resources, the schools had poor infrastructure, tiny schoolyards and small classrooms for a large number of students. Classrooms were divided between elementary school and high school for different parts of the day, which implied that some ninth graders would start their school day at 6AM and finish in the afternoon. Others would start in the afternoon and finish late. This was the normal solution for small schools in poor areas to deal with the large number of students of different ages. Many students had been forcefully displaced with their families due to the civil conflict between the Colombian government and the FARC. Almost all the students in the different schools participating in the program were failing multiple subjects.

Different treatments were randomly distributed to ten different classrooms within these schools. Randomization by classrooms was preferred over individual randomization because of the practical challenges in different schools and a concern of spillovers between treatments. In addition, we decided, due to ethical constraints on limiting this randomization by making it impossible for classrooms within the same school to get treatments with different use of the incentives. There would therefore be no schools with both conditional and unconditional incentives for different classrooms in one school.

In total, the sample consists of 313 subjects in 9th grade across seven different schools. Table 1 shows the different characteristics at baseline. The mean age is 15 years old of which 49% are female. The students live in household consisting of on average five people, where 55% are female and they have on average one sibling in school. In their self-assessments,

students classified their economic condition as “getting by”. This may be attributed to their comparison to other families in their neighborhood who were more impoverished.

3.2 Experimental Treatments

This field experiment was formed to investigate the effectiveness of setting goals, self-help groups and incentives on achievement levels. The difference between the incentive and no incentive treatments is the conditionality of the incentive on achieving goals. This modification of the FII approach was chosen to contribute to the ongoing debate between conditional and unconditional cash transfers. Conditional treatments would receive their incentive only if they achieved their goal. Unconditional treatments would receive their incentive regardless of if a student achieved their goal. There are five different treatment conditions: Four treatment arms (Group II: goal/no-incentive/no-group; Group III: goal/no incentive/group; Group IV: goal/incentive/no group; Group V: goal/incentive/group) and one control group (Group I: no goal/no-incentive/no-group). Figure 1 illustrates this experimental set-up.

3.3 Goals, Incentives and Groups

A list of goals was created in cooperation with the Secretary of Education, teachers, principals and through surveys with the students of the schools in our project. The list of goals is provided in the appendix. Goals needed to be verifiable, reasonable to accomplish over two weeks and help the students to improve different educational outcomes. Subjects in the four different treatments needed to be able to bring proof of achievement of their selected objective, without proof the objective was marked as not achieved. A list of the final seven goals given to the students is provided in the appendix. Absent students were marked as having failed in achieving their goal. This conservative approach was chosen to rather underestimate than overestimate the results. Absent students may have completed their goal, regardless of them showing up to school on a specific day. A follow-up survey was completed every second week, where the students were asked if they achieved their selected goal or any of the other goals on the goal list. The only goal to be verified by proof of completion was the goal selected two weeks earlier.

As an incentive, we used a token of 12,000 COP (US \$3-4) that the students could use in the school shop to buy fruits, drinks, and snacks. Tokens were preferred over a cash incentive due to the token being easier to control and avoiding the risk of unwanted exchanges. Incentives could only be exchanged for food in the school shop. They had a list of

the students participating in the program and how many tokens each student should have between each meeting. The tokens were laminated with the student's name as a unique identifier, and were only accepted in the school shop as payment for the specific student. This method makes the distribution of the incentive easier to manage in a controlled manner. The difference between the incentive and no incentive treatment was if they had to achieve an objective to get the incentive or if they would receive it unconditionally on achieving their selected objective. In the control group, students received the incentive for completing surveys inquiring about the completion of various tasks (corresponding to the list of goals) without mentioning anything about goals.

In the self-help group treatments, students had to stand in front of the class and talk shortly about their completion and selection of objectives. Students had to answer three different questions: "Did you achieve the goal you selected two weeks ago? Was your goal easy or difficult to achieve? What goal do you want to achieve in two weeks?" Enumerators were assigned to oversee the procedure of this treatment arm to ensure students compliance. Students refusing to participate in the self-help group would not receive their incentive. This treatment was added to estimate if peer pressure contributes to the achievement of objectives.

4. Model and Hypothesis

This field experiment tests the effectiveness of goals, incentives and self-help groups on achieving educational objectives. The main variable of interest for this paper is the effectiveness of setting goals. The hypothesis is therefore that goal setting among low-income ninth graders leads to higher average goal achievements of educational outcomes. A second hypothesis is that higher average goal achievement will lead to higher academic performance. The baseline model is thus:

$$Goal\ Achievement_{it} = \beta_0 + \beta_1 Goals + \beta_2 Group + \beta_3 Incentive + \beta_4 Group * Incentive + \beta_5 Self\ Esteem_{it} + \beta_6 Risk_{it} + \beta_7 Goal\ Difficulty_{it} + \gamma X_i + \varepsilon_i$$

In the model above, the dependent variable is an indicator, which takes the value of one if subject i - completes a selected goal over the time period t and zero if the subject on average didn't achieve any goals. *Goals* is a variable that is equal to one if a student was in a treatment with goal setting. *Group* and *Incentive* likewise take a value of one if the individual is subjected to that treatment. An interaction of the *Group* and *Incentive* variables is included

to analyze their combined effect on goal achievement. The *Goal Difficulty* value is reflective of the answers to the survey based on the difficulty the individual assigned to the selected goal (easy, normal, difficult), and was conducted before the goal was/was not accomplished. This will prevent possible endogeneity by accounting for an individual reporting a goal to be difficult after the individual failed to achieve the selected goal. *Self-Esteem* is an index of self-esteem estimated by taking the mean of the answers about self-esteem from the surveys, which are inspired by the Rosenberg Self-Esteem Scale. The higher the value, the higher the self-esteem of individual i in period t . The *Risk* variable is measures the general risk level of a student on a scale from 1-10 from their answer in the base line survey. A high value translates into a risk-tolerant individual i in period t . X is representative of auxiliary variables that are mainly used as control variables reflecting differences in demographics that may have not been controlled for by randomization. These variables are gender, age and a self-assessment variable of a student's economic condition. The parameters attached to *Goals* captures the effect the goal setting has on the attainment of educational outcomes. This effect is in the second hypothesis assumed to improve academic performance in better average grades in the third and fourth quarter of the schoolyear.

5. Experimental Results

5.1 Achievement of a Chosen Goal by Treatment and Gender

Figure 2 displays the mean of the average individual achievement of a selected goal in each of the four different treatments. The highest overall performance was in Group V (Self-help group and prize), where students achieved their educational objectives about 75% of the time. There is not a significant difference between Group IV (No self-help group and prize) and Group V, which illustrates the importance of incentives, although the coefficient is higher for Group V. Interestingly, there is a significant difference between Group II (No self-help group and no prize) and Group III (Self-help groups and no prize). Self-help groups alone significantly increase the probability of achieving a goal. It is also worth noticing that without prize nor self-help groups, students still achieve their goals over 30% of the time. The control group is not represented because they are not selecting goals.

There is a clear difference between the achievements of boys and girls, where girls are doing significantly better in three of the treatments (Figure 3). Boys and girls are achieving equally well in Group V, it is the only treatment with no significant difference between gender. Interestingly the treatments works as a ladder for boys, where groups and incentives are

building on each other. Girls had their best performance with only the conditional incentive being more effective than combining this treatment with the group treatment.

5.2 Logit regression of Achievement of a Chosen Goal by Treatment

Represented by Table 2, are the results of panel logit estimates to estimate the probability of a subject achieving a selected goal in two weeks. Separating the effect of groups, incentives and the interaction of the two (FII) on goal achievement separates the effects of the different treatments. This assumes a logistical distribution, which makes the logit model appropriate. The coefficients reported are logit coefficients, where the marginal effects in percentage points are about one-fourth of the magnitude expressed in the table. The incentive and group treatments are highly significant throughout different specifications. Treatments with incentives have a larger effect than the treatment with groups, but both plays an important role on goal achievement. The FII treatment turns insignificant when controls are added to the regression. This is likely due to the conditional incentive being highly significant and adding the group treatment is not contributing an effect to increased goal achievement at the already high level of achievement. In specification (5), the Incentive treatment increase the likelihood of achievement with 42.4% and the Group treatment with 18.5%. These results are strong and the incentive and group treatments have a robust effect on goal achievement. Older students have a significantly lower probability of achieving goals, which represents students in our sample who have repeated grades. Girls in ninth grade are as we saw in Figure 2, significantly more likely than boys to achieve their selected goal. Students with higher self-esteem have a 9.1% higher probability of achievement. The difficulty level of the goals is insignificant, which can be explained in that we succeeded in creating about equally challenging goals. Neither a student's risk tolerance nor the student's self-assessment of his/her economic condition seems to matter on goal achievement. Goal setting can interestingly be equally effective on different perceived poverty levels.

5.3 The Treatment Group compared to the Control Group

In Table 3, treatments with goal setting are compared to the control group to find if the setting of goals leads to higher likelihood of reporting achieving a selected goal. The coefficients are represented by logit-coefficients. Students in both the control group and the treatment groups filled out surveys biweekly on whether they accomplished the tasks corresponding to their selected goal. The dependent variables are dummy variables indicating the self-reported answers of students to the questions on achieving the seven goals, where each column represent one goal. A "yes" to a question on achieving a goal will be interpreted

as a one, and a “no” as a zero. The *Selected Goal* variable is the interaction of two dummy variables, the first one indicating whether the student is in a treatment with goal setting and the second one indicating if the selected goal corresponds to the self-reported achievement of the goal. Having selected a goal significantly increases the likelihood of reported achievement of that goal in six out of seven goals.

Goal 2, which is insignificant, is the goal about not missing or being late for school. Students in the control group might have been more inclined to report not missing school due to attendance not being verified during the program. This was a common phenomenon in the treatment groups at the beginning of the program, where teachers would assist in verifying the achievement of this goal. As goals were verified every week, students in the treatments would over report less and less compared to the control. These results can be interpreted as goal setting significantly increasing the probability of students self-reporting achieving a selected goal.

5.4 Average Grades in Third and Fourth Quarter

Table 4 explores if the increase in goal achievement improved the student’s grades in the third and fourth quarter of the school year. These were periods during and after the program took place, and the dependent variable in this OLS regression is the average grade of these periods. Across the schools, all students attended ten main classes. Average grades were calculated for different quarters by taking the mean of these classes. A student’s mean of achieved goals is positive and significant through all five specifications. Students with higher average goal achievement leads to higher academic performance through improved grades. Robust standard errors are used to correct for potential heteroscedasticity.

The most important variable in validating this regression is their previous grades. By controlling for their initial performance level, it is possible to isolate the effect of achieving goals on educational outcomes. Provided is the average grade of the first quarter, and it is easy to see that the coefficients are highly significant in explaining a student’s forthcoming grades. As a robustness test, the same regression was run with grades from the second quarter and the variable shows similar magnitude and significance. Older students are performing significantly worse than their younger classmates. These students have likely repeated a grade; they are thus more likely to have lower grades. Gender, self-esteem and the risk level of a student are all insignificant in explaining a student’s average grade. Interestingly, a student’s self-assessment of their economic condition is significantly explaining the average grade in the third and fourth quarter. A student with higher perceived socio-economic status is achieving higher grades. This is relevant for students in this program, where perceived

socio-economic status is not a determining contributor in increasing goal achievement. Goal setting can hence improve grades for students with different perceptions of their economic conditions.

5.5 Goal Setting is a Cost-Effective Approach for Low-Income Students

Goal setting is a cost-effective approach to improve academic performance. Combining goals with incentives is the most effective treatment to increase goal achievement. Social capital matters and there is a significant impact of combining goals and self-help groups. Higher academic performance through higher grades is achieved for students regardless of their socio-economic status through increasing their goal achievements. This shows that a focus on the internal constraint of the poor can be a cost-effective way to create a path out of poverty. Changing the attitudes and behaviors of participants, students can achieve academic goals and escape potential poverty traps. In addition to this, as pointed out by Heckman (2006), this program may have through goal setting, incentives and self-help groups, unknown benefits on non-cognitive skills. These prospective skills are proved to have a large impact schooling decisions and due to this, the future wages of students. Goal setting is a cost-effective approach and recommended for future policies to improve educational outcomes among low-income students.

6. Conclusion

Recent research investigates low-cost techniques to create pathways out of poverty by changing social behavior. The Family Independence Initiative exemplifies this, employing goal setting, incentives and self-help groups to enable individuals to lift themselves out of poverty by changing their behavior. This triggers an accumulation of social capital in an effective manner. The FII approach separates and interacts the different experimental components (goals, incentives and self-help groups), which gives us the ability to determine how each of the different components are driving the success of the program.

Evidence from this field experiment in Medellin, Colombia, applying the FII approach, shows that goal setting is a cost-effective method to help low-income students achieve educational outcomes. Setting a goal significantly increases a subject's probability of achieving the task set out in the goal. Combining this with incentives and self-help groups is the most effective approach, with an increase in the likelihood of achieving an educational goal by 41% compared to setting a goal alone. Increased goal achievement leads to a higher academic performance through a higher average grade. Goal setting is effective regardless of a students'

perceived socio-economic status, which is relevant due to this being a significant constraint on a students' grade. Furthermore, there might be unknown additional benefits of the program on non-cognitive skills such as motivation and self-efficacy.

Future research should attempt to randomize at the individual level or include additional classrooms and schools to strengthen the conclusions on the effectiveness of the program. The Antioquia Department of Education are currently planning to expand the program at a larger scale of ninth graders in Medellin. An impact evaluation on the implantation would provide valuable and meaningful insight. The treatments, both on their own and combined, have a large and significant impact on educational achievements among ninth graders. These methods of using and combining approaches from different fields within development may significantly contribute to find new pathways out of poverty.

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| | | | |
|--|---------------------|--|--|
| Control Groups: No Goals, No SHG, No Incentive *Control Group (n=78) N=313 | | Self-Help Groups SHG (Social Capital) | |
| | | <u>No SHG</u> | SHG |
| Individual Incentives | <u>No Incentive</u> | <i>Treatment Group II</i> Goals, No SHG, No Incentive (n=59) | <i>Treatment Group III</i> Goals, SHG, No Incentive (n=63) |
| | Incentive | <i>Treatment Group IV</i> Goals, No SHG, Incentive (n=55) | <i>Treatment Group V</i> Goals, SHG, Incentive (n=58) |

Figure 1. Experimental Design

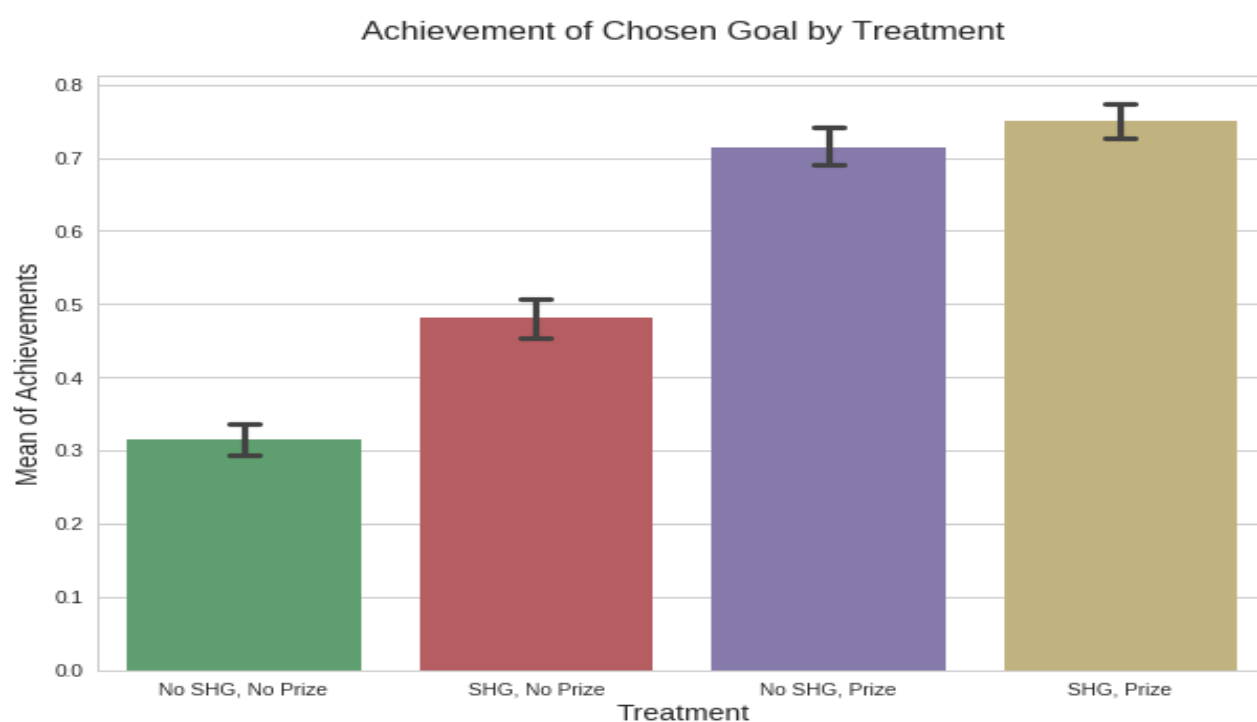


Figure 2 Achievement of Chosen Goal. The bars shows the mean of the average individual achievement of the chosen goal by treatment group. Group II=No SHG/No Prize; Group III=SHG/No Prize; Group IV=No SHG Prize; Group V=SHG/Prize.

Achievement of Chosen Goal by Treatment

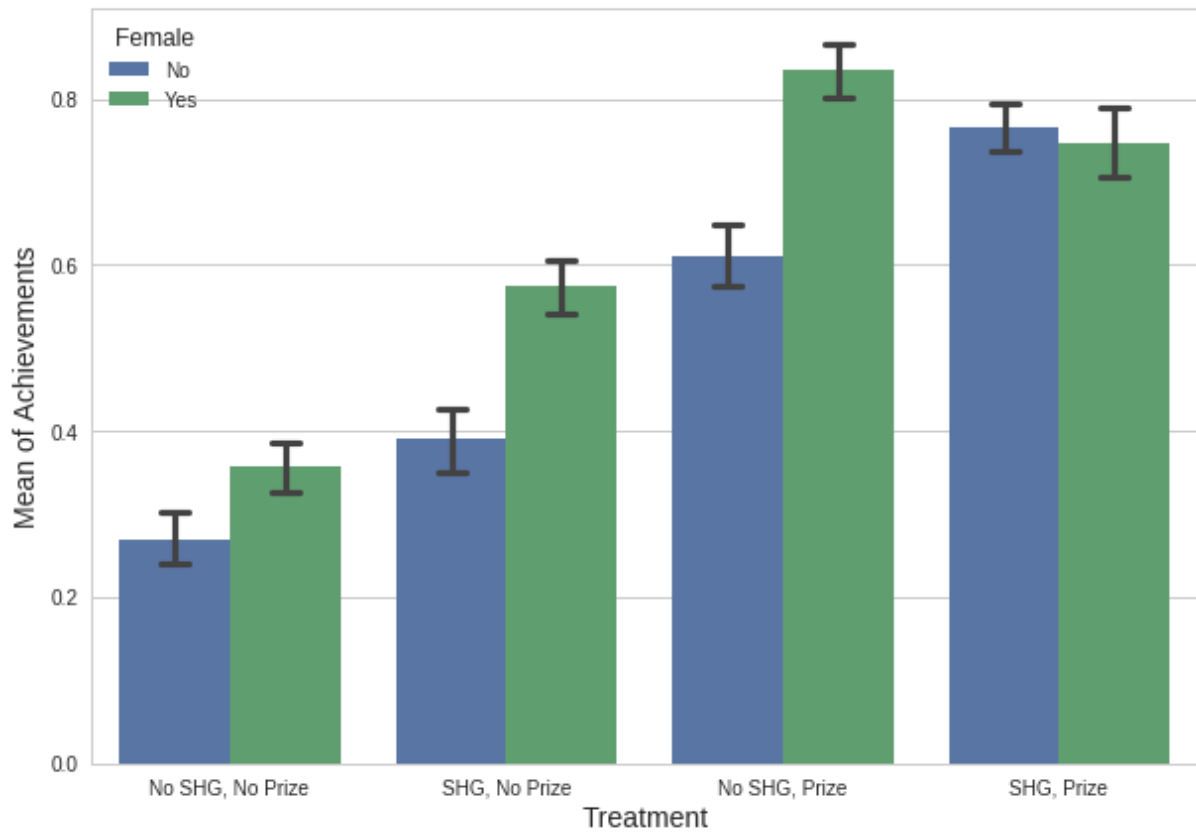


Figure 3 **Achievement of Chosen Goal.** The bars shows the mean of the average individual achievement of the chosen goal by treatment group and gender. Group II=No SHG/No Prize; Group III=SHG/No Prize; Group IV=No SHG Prize; Group V=SHG/Prize.

Table 1: Summary Statistics at Baseline: Balance Check

| | All | Group I | Group II | Group III | Group IV | Group V |
|----------------|------------------|------------------|------------------|------------------|------------------|------------------|
| Age | 15.18 (1.158) | 14.96 (1.140) | 15.29 (1.364) | 15.15 (0.963) | 15.17 (1.077) | 15.41 (1.206) |
| Female | 0.49 (0.501) | 0.50 (0.503) | 0.50 (0.504) | 0.55 (0.502) | 0.47 (0.504) | 0.42 (0.498) |
| Household | 4.86 (1.904) | 4.81 (1.790) | 5.00 (2.098) | 4.53 (1.793) | 4.97 (1.946) | 5.50 (2.121) |
| Pct. Female | 0.55 (0.208) | 0.56 (0.197) | 0.53 (0.179) | 0.57 (0.234) | 0.51 (0.220) | 0.52 (0.202) |
| Siblings | 1.13 (1.136) | 1.11 (1.138) | 1.19 (1.283) | 1.02 (0.969) | 1.06 (1.099) | 1.56 (1.338) |
| Economic | 2.89 (0.367) | 2.85 (0.485) | 2.91 (0.342) | 2.82 (0.388) | 2.93 (0.262) | 2.98 (0.235) |
| Self esteem | 3.12 (0.462) | 3.05 (0.442) | 3.14 (0.490) | 3.08 (0.407) | 3.14 (0.421) | 3.26 (0.533) |
| Risk | 5.05 (1.749) | 4.85 (1.655) | 4.90 (1.746) | 5.16 (1.795) | 4.97 (1.870) | 5.41 (1.690) |
| <i>N</i> | 313 | 78 | 59 | 63 | 55 | 58 |

Notes: Household represents number of people living in the same house

Pct. Female measure the ration of females within the household

Siblings is the number of siblings in school age

Economic is a self-assessment of whether the student feel they are 1=very poor, 2=poor, 3=getting by, 4=rich

Self Esteem is mean (1-4) generated from survey self-esteem questions.

Risk is mean (1-10) generated from survey risk questions.

Mean coefficients; sd in parentheses.

Table 2: Achievement of Selected Goal by Treatment

| VARIABLES | (1) | (2) | (3) | (4) | (5) |
|--------------------|----------------------|---------------------|---------------------|---------------------|---------------------|
| Group | 0.777*** (0.174) | 0.800*** (0.184) | 0.730*** (0.192) | 0.714*** (0.194) | 0.740*** (0.199) |
| Incentive | 1.720*** (0.186) | 1.788*** (0.197) | 1.702*** (0.209) | 1.688*** (0.210) | 1.695*** (0.211) |
| FII | -0.544** (0.265) | -0.503* (0.282) | -0.425 (0.298) | -0.412 (0.302) | -0.445 (0.307) |
| Age | | -0.135** (0.061) | -0.150** (0.064) | -0.131** (0.065) | -0.125* (0.066) |
| Female | | 0.618*** (0.142) | 0.613*** (0.156) | 0.601*** (0.157) | 0.604*** (0.159) |
| Self-Esteem | | | 0.395** (0.173) | 0.359** (0.176) | 0.364** (0.177) |
| Risk | | | -0.026 (0.043) | -0.036 (0.044) | -0.036 (0.044) |
| Goal Difficulty | | | | -0.098 (0.114) | -0.090 (0.115) |
| Economic Condition | | | | | 0.088 (0.234) |
| Constant | -0.742*** (0.129) | 0.969 (0.948) | 0.148 (1.192) | 0.187 (1.222) | -0.201 (1.472) |
| Observations | 1,102 | 1,007 | 915 | 899 | 891 |

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Logit panel, dep. var. = 1 if subject achieved her/his goal, 0 if not

The regression coefficients are simultaneously significant (Wald-test)

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 3: Setting Goals vs Control Group

| VARIABLES | Goal 1 | Goal 2 | Goal 3 | Goal 4 | Goal 5 | Goal 6 | Goal 7 |
|---------------|-----------------------|----------------------|----------------------|----------------------|-----------------------|----------------------|----------------------|
| Selected Goal | 1.474*** (0.220) | -0.438 (0.285) | 1.455*** (0.282) | 2.231*** (0.221) | 1.790*** (0.240) | 2.137*** (0.217) | 2.787*** (0.282) |
| Constant | -0.519*** (0.0489) | -3.011*** (0.112) | -0.299*** (0.048) | -1.335*** (0.058) | -0.495*** (0.0487) | -1.472*** (0.061) | -1.746*** (0.066) |
| Observations | 2,904 | 2,904 | 2,904 | 2,904 | 2,904 | 2,904 | 2,904 |

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 4: Quarter 3 & Quarter 4 Average Grade

| VARIABLES | (1) | (2) | (3) | (4) | (5) |
|--------------------|---------------------|---------------------|----------------------|----------------------|----------------------|
| Mean Achieved Goal | 0.487*** (0.091) | 0.374*** (0.094) | 0.340*** (0.099) | 0.315*** (0.098) | 0.321*** (0.099) |
| Q1 Avg Grade | 1.034*** (0.076) | 0.945*** (0.079) | 0.984*** (0.088) | 0.990*** (0.087) | 0.988*** (0.087) |
| Age | | -0.078** (0.025) | -0.093*** (0.026) | -0.087*** (0.028) | -0.090*** (0.028) |
| Female | | 0.067 (0.051) | 0.043 (0.054) | 0.032 (0.053) | 0.034 (0.055) |
| Self-Esteem | | | -0.025 (0.048) | -0.032 (0.047) | -0.030 (0.048) |
| Risk | | | 0.001 (0.016) | 0.004 (0.016) | 0.006 (0.016) |
| Economic Condition | | | | 0.315*** (0.084) | 0.315*** (0.086) |
| Goal Difficulty | | | | | 0.011 (0.049) |
| Constant | -0.504* (0.306) | 1.043** (0.522) | 1.224** (0.603) | 0.219 (0.780) | 0.233 (0.789) |
| Observations | 449 | 403 | 364 | 360 | 358 |
| R-squared | 0.489 | 0.501 | 0.516 | 0.532 | 0.533 |

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Appendix 1: List of Goals

Table A1: List of Goals for Student Selection

| Number | <u>Goal</u> (For the next two weeks) | <u>Verification Method</u> | <u>Frequency</u> |
|---------------|--|-----------------------------------|-------------------------|
| 1. | Over the next two weeks, search for information pertaining to technical or professional careers that you would like to study when you are finished with school | Full Page Essay | One Time |
| 2. | For the next two weeks do not miss school or be late for school | Teacher Verification | Repeatable |
| 3. | Over the next two weeks achieve a score of at least 3.5 in your weakest subject | Teacher Verification | Repeatable |
| 4. | Over the next two weeks search for information pertaining to the risks involved with engaging in unprotected sexual relations and possible transmission of STDs and write full page essay of your findings | Full Page Essay | One Time |
| 5. | Over the next two weeks, actively participate in at least four classes | Teacher Verification | Repeatable |
| 6. | 6. Over the next two weeks, search for information pertaining to the inherent risks involved with taking illicit drugs and write a full page essay on your findings. | Full Page Essay | One Time |
| 7. | 7. Over the next two weeks, search for information pertaining to the Saber Test that you will be taking in October and write a full page essay on your findings | Full Page Essay | One Time |

Appendix 2: Surveys

A2.1. Demographic Survey

| |
|--|
| Date: _____ |
| Full Name: _____ |
| Identification/Cellular Number: _____ |
| School: _____ Class: _____ |

Please fill out the following table with the information pertaining to each and every person in your household, including yourself.

| A. Number of Family Members | B. Member of family within your household | C. Age | D. Gender (Male or Female) | F. Is this person currently enrolled in school? 0= NO 1= YES | G. In what type of school is this member enrolled in? 1=Preschool 2=Primary 3=High School 4=Tech/Vocation 5=Tech College 6=University 7= Not Applicable | H. Highest completed studies? 0= None 1=Primary 2=High School 3=Tech/Vocation 4=Tech College 5=University 6=Post Grad 7=Other Certifications | I. Is this household member currently employed? 0= NO 1= YES | J. If yes (to I), what job? |
|-----------------------------|---|--------|----------------------------|--|--|--|--|-----------------------------|
| Example | Mother | 35 | Female | 0 | 3 | 2 | 1 | Artist |
| 1 | You | | | | | | | |
| 2 | Father | | | | | | | |
| 3 | Mother | | | | | | | |
| 4 | Sibling | | | | | | | |
| 5 | Sibling | | | | | | | |
| 6 | Sibling | | | | | | | |
| 7 | Sibling | | | | | | | |
| 8 | Sibling | | | | | | | |
| 9 | Grandfather | | | | | | | |
| 10 | Grandmother | | | | | | | |
| 11 | Uncle | | | | | | | |
| 12 | Aunt | | | | | | | |
| 13 | Step-Father | | | | | | | |
| 14 | Step-Mother | | | | | | | |
| 15 | Boyfriend (GF) | | | | | | | |
| 16 | Other | | | | | | | |
| 17 | Other | | | | | | | |

| | | |
|-----|---|---|
| | | <input type="checkbox"/> No |
| 13. | How long does it take for you to travel to school? | <input type="checkbox"/> Less than 10 minutes <input type="checkbox"/> Between 10 and 20 minutes <input type="checkbox"/> Between 21 and 30 minutes <input type="checkbox"/> More than 30 minutes |
| 14. | What mode of transport do you mainly utilize to travel to school? | <input type="checkbox"/> Walking <input type="checkbox"/> Bicycle <input type="checkbox"/> Motorcycle <input type="checkbox"/> Family car <input type="checkbox"/> Public service car / Taxi <input type="checkbox"/> Bus <input type="checkbox"/> Metro / Cable car <input type="checkbox"/> Other, What? _____ |
| 15. | Do you have a PAID job outside of school? | <input type="checkbox"/> Yes What job? _____ <input type="checkbox"/> No |
| 16. | How many days do you work at your job in a week? | <input type="checkbox"/> 1 day <input type="checkbox"/> 2 days <input type="checkbox"/> 3 days <input type="checkbox"/> 4 days <input type="checkbox"/> 5 days <input type="checkbox"/> More than 5 days <input type="checkbox"/> I am not working |
| 17. | How many hours do you work each day at your job? | <input type="checkbox"/> Less than 2 hours <input type="checkbox"/> Between 3 and 5 hours <input type="checkbox"/> More than 5 hours <input type="checkbox"/> I am not working |
| 18. | How many hours per day do you spend outside of school studying and doing homework? | <input type="checkbox"/> Less than 1 hour <input type="checkbox"/> Between 1 and 2 hours <input type="checkbox"/> Between 2 and 4 hours <input type="checkbox"/> More than 4 hours |
| 19. | How difficult do you find school to be? | <input type="checkbox"/> Very easy <input type="checkbox"/> Easy <input type="checkbox"/> Normal <input type="checkbox"/> Difficult <input type="checkbox"/> Very difficult |
| 20. | How important is it to you that you receive good marks in your subjects at school? | <input type="checkbox"/> NOT important <input type="checkbox"/> A little important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Important <input type="checkbox"/> Very important |
| 21. | How important is it to your parents that you receive good marks in your subjects at school? | <input type="checkbox"/> NOT important <input type="checkbox"/> A little important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Important <input type="checkbox"/> Very important |
| 22. | In general, how engaging and collaborative do you find your teachers? | <input type="checkbox"/> Neither engaging nor collaborative <input type="checkbox"/> A little engaging and collaborative <input type="checkbox"/> Somewhat engaging and collaborative <input type="checkbox"/> Engaging and collaborative <input type="checkbox"/> Highly engaging and collaborative |
| 23. | In general, how would you describe your relationship with your teachers? | <input type="checkbox"/> NOT Good <input type="checkbox"/> Regular <input type="checkbox"/> Good <input type="checkbox"/> Very good <input type="checkbox"/> Excellent |
| 24. | How comfortable are you working with your classmates? | <input type="checkbox"/> Not comfortable <input type="checkbox"/> A little comfortable |

| | | |
|-----|--|--|
| | | <input type="checkbox"/> Comfortable <input type="checkbox"/> Very comfortable <input type="checkbox"/> Extremely comfortable |
| 25. | In general, how would you describe your relationship with your classmates? | <input type="checkbox"/> NOT Good <input type="checkbox"/> Regular <input type="checkbox"/> Good <input type="checkbox"/> Very Good <input type="checkbox"/> Excellent |
| 26. | How important do you feel completing the 9th grade is for your personal and professional future? | <input type="checkbox"/> Not important <input type="checkbox"/> A little important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Important <input type="checkbox"/> Very important |
| 27. | Do you feel that finishing 9th grade will help you get a better job? If not, why? | <input type="checkbox"/> Yes <input type="checkbox"/> No Why? _____ |
| 28. | Do you feel that finishing 11th grade will help you get a better job? If not, why? | <input type="checkbox"/> Yes <input type="checkbox"/> No Why? _____ |
| 29. | What is your plan after you graduate from school? | <input type="checkbox"/> Continue studies <input type="checkbox"/> Getting a job <input type="checkbox"/> Getting a job and continue studies <input type="checkbox"/> Start your own business <input type="checkbox"/> Start your own business and continue studies <input type="checkbox"/> I have no plans <input type="checkbox"/> Other, What? _____ |
| 30. | In the past two weeks, have you searched for information pertaining to vocational careers, or professional and technological careers/education for when you finish school? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 31. | In the past two weeks have you searched for information or studied for the Pruebas Saber (standardized exam) that you will take in October? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 32. | In the past two weeks, have you received documented disciplinary action for behavior at school? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 33. | What is the subject which you have the lowest grade and what is the average grade you receive in that class? | Subject: _____ Average grade: _____ |
| 34. | In the past two weeks, have you searched for information pertaining to the transmission of sexual diseases due to unprotected sex? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 35. | In the past two weeks, have you actively participated in class? | <input type="checkbox"/> Yes In how many classes did you participate? _____ <input type="checkbox"/> No |
| 36. | In the past two weeks, have you searched for information pertaining to the effects of using illicit drugs? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 37. | Do you think you will live in your current neighborhood for the rest of your life? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 38. | What job do you think you will have when you are 25 years of age? | _____ |

| | | |
|-----|--|---|
| 39. | At what age do you wish to get married or live with your long-term partner? | <input type="checkbox"/> Before I am 18 years old <input type="checkbox"/> Between being 18 and 22 years old <input type="checkbox"/> Between being 23 and 29 years old <input type="checkbox"/> After I am 30 years old <input type="checkbox"/> I don't want to get married / I don't want to live with a long term partner |
| 40. | At what age do you wish to have your first child? | <input type="checkbox"/> Before I am 18 years old <input type="checkbox"/> Between being 18 and 22 years old <input type="checkbox"/> Between being 23 and 29 years old <input type="checkbox"/> After I am 30 years old <input type="checkbox"/> I don't want to have kids |
| 41. | Do you think you will become a leader in your community? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 42. | How much do you agree with: "I consider myself to be a person of equal value to others?" | <input type="checkbox"/> I totally agree <input type="checkbox"/> I agree <input type="checkbox"/> I disagree <input type="checkbox"/> I totally disagree |
| 43. | How much do you agree with: "I consider myself to be equally as capable of accomplishing things as others?" | <input type="checkbox"/> I totally agree <input type="checkbox"/> I agree <input type="checkbox"/> I disagree <input type="checkbox"/> I totally disagree |
| 44. | How much do you agree with: "I do NOT have many things that make me proud of myself?" | <input type="checkbox"/> I totally agree <input type="checkbox"/> I agree <input type="checkbox"/> I disagree <input type="checkbox"/> I totally disagree |
| 45. | How much do you agree with: "In general, I feel satisfied with who I am?" | <input type="checkbox"/> I totally agree <input type="checkbox"/> I agree <input type="checkbox"/> I disagree <input type="checkbox"/> I totally disagree |
| 46. | How much do you agree with: "Sometimes, I feel that I am good for nothing?" | <input type="checkbox"/> I totally agree <input type="checkbox"/> I agree <input type="checkbox"/> I disagree <input type="checkbox"/> I totally disagree |
| 47. | Have you or any of your family members been affected by the following events? | <input type="checkbox"/> Robbery or attack <input type="checkbox"/> Extortion <input type="checkbox"/> Bodily injuries <input type="checkbox"/> Forced displacement <input type="checkbox"/> Homicide <input type="checkbox"/> Suicide <input type="checkbox"/> Domestic violence <input type="checkbox"/> Intent of rape or rape <input type="checkbox"/> Kidnapping <input type="checkbox"/> Consumption or abuse of alcohol <input type="checkbox"/> Consumption or abuse of illegal drugs <input type="checkbox"/> None of the above <input type="checkbox"/> Other |
| 48. | In the past two weeks, have you participated in any activities outside of school or community/neighborhood events? | <input type="checkbox"/> Yes What activity? _____ _____ <input type="checkbox"/> No |
| 49. | In general, how likely do you think you are to engage in risky behavior? | Mark a number between 1 and 10, where 1 indicates that I am absolutely not prepared to take any risks and 10 indicates that I am totally prepared a to take risks: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10 |

| | | |
|-----|--|---|
| 50. | In terms of sports, games, and other recreational activities, how likely do you think you are to engage in risky behavior? | Mark a number between 1 and 10, where 1 indicates that I am absolutely not prepared to take any risks and 10 indicates that I am totally prepared a to take risks: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10 |
| 51. | In terms of your personal health (think smoking, drug use, unprotected sex, diet, etc.), how likely are you to engage in risky behavior? | Mark a number between 1 and 10, where 1 indicates that I am absolutely not prepared to take any risks and 10 indicates that I am totally prepared a to take risks: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10 |
| 52. | How likely is it that you would be willing to be a passenger on a motorcycle with someone who has consumed alcohol? | Mark a number between 1 and 10, where 1 indicates that I am absolutely not prepared to take any risks and 10 indicates that I am totally prepared a to take risks: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10 |
| 53. | In general, how patient do you believe yourself to be? | <input type="checkbox"/> Extremely patient <input type="checkbox"/> Relatively Patient <input type="checkbox"/> Patient <input type="checkbox"/> Impatient <input type="checkbox"/> Relatively impatient <input type="checkbox"/> Extremely impatient |
| 54. | Which do you prefer: receive 20 minutes on your cellphone now or receive 25 minutes on your cellphone in a month? | <input type="checkbox"/> Now <input type="checkbox"/> In a month |
| 55. | Which do you prefer: receive 20 minutes on your cellphone now or receive 30 minutes on your cellphone in a month? | <input type="checkbox"/> Now <input type="checkbox"/> In a month |
| 56. | How many total minutes would you require to be given to wait one month for as opposed to 20 minutes now? | _____ minutes |
| 57. | Which do you prefer: receive 20 minutes on your cellphone now or receive 25 minutes on your cellphone in six months? | <input type="checkbox"/> Now <input type="checkbox"/> In six months |
| 58. | Which do you prefer: receive 20 minutes on your cellphone now or receive 30 minutes on your cellphone in six month? | <input type="checkbox"/> Now <input type="checkbox"/> In six months |
| 59. | How many total minutes would you require to be given to wait 6 months for as opposed to 20 minutes now? | _____ minutes |
| 60. | Which do you prefer: receive 20 minutes on your cellphone now or receive 25 minutes on your cellphone in a year? | <input type="checkbox"/> Now <input type="checkbox"/> In a year |
| 61. | Which do you prefer: receive 20 minutes on your cellphone now or receive 30 minutes on your cellphone in a year? | <input type="checkbox"/> Now <input type="checkbox"/> In a year |
| 62. | How many total minutes would you require to be given to wait an entire year for as opposed to 20 minutes now? | _____ minutes |

A2.3. Follow-up Survey: Treatment Groups

| | |
|---------------------|--|
| Date: | |
| Name: | |
| ID Number: | |
| School Name: | |
| Group: | |

| | | |
|-----|---|---|
| 1. | In the last two weeks, have you searched for information pertaining to technical or professional careers that you would like to study when you are finished with school? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 2. | In the last two weeks, have you missed any days of school? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 3. | In the last two weeks, have you been late to school any days? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 4. | In the last two weeks, have you achieved scores of at least 3.5 in your lowest subject for each homework and test that occurred in that subject? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 5. | In the last two weeks, have you searched for information pertaining to the risks involved with engaging in unprotected sexual relations and possible transmission of STDs | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 6. | In the last two weeks, have you actively participated in at least 4 classes? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 7. | In the last two weeks, have you searched for information pertaining to the inherent risks involved with taking illicit drugs? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 8. | In the last two weeks, have you gotten into trouble at school and been written up for your behavior? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 9. | In the last two weeks, have you searched for information pertaining to the Saber Test that you will be taking in October? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 10. | Do you feel that you have completed the objective that you set for yourself two weeks ago? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 11. | How difficult do you feel it was for you to try and complete your selected objective? | <input type="checkbox"/> Easy <input type="checkbox"/> Normal <input type="checkbox"/> Hard |

A2.3. Follow-up Survey: Control Group

| | |
|---------------------|--|
| Date: | |
| Name: | |
| ID Number: | |
| School Name: | |
| Group: | |

| | | |
|----|---|---|
| 1. | In the last two weeks, have you searched for information pertaining to technical or professional careers that you would like to study when you are finished with school? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 2. | In the last two weeks, have you missed any days of school? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 3. | In the last two weeks, have you been late to school any days? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 4. | In the last two weeks, have you achieved scores of at least 3.5 in your lowest subject for each homework and test that occurred in that subject? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 5. | In the last two weeks, have you searched for information pertaining to the risks involved with engaging in unprotected sexual relations and possible transmission of STDs | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 6. | In the last two weeks, have you actively participated in at least 4 classes? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 7. | In the last two weeks, have you searched for information pertaining to the inherent risks involved with taking illicit drugs? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 8. | In the last two weeks, have you gotten into trouble at school and been written up for your behavior? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 9. | In the last two weeks, have you searched for information pertaining to the Saber Test that you will be taking in October? | <input type="checkbox"/> Yes <input type="checkbox"/> No |