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SCHOOL DROPOUT PREVENTION PILOT PROGRAM

REVIEW OF THE LITERATURE

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School Dropout Prevention Pilot Program

Review of the Literature

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Table of Contents

List of Tables ii

List of Acronyms iii

Executive Summary v

1.0 Introduction 1

1.1 Purpose of the review 1

1.2 The definition of "dropout" 2

1.3 Methodology for the review and selection of interventions 2

1.4 Organization of the report 4

2.0 Profile and Characteristics of Children and Youth At-Risk of Dropout 5

2.1 The scope of the dropout problem 5

2.2 The factors that correlate with children dropping out 6

3.0 Interventions to Prevent Dropout 11

3.1 A typology of interventions 11

3.2 Results of rigorous evaluations of dropout intervention programs 13

3.2.1 Selection of interventions 13

3.2.2 Description of rigorously evaluated interventions 15

3.2.3 Assessment of program effectiveness 18

3.3 Description of dropout intervention programs not meeting SDPP criteria 23

3.3.1 Selection of interventions 23

3.3.2 Description of interventions not meeting SDPP criteria 25

3.3.3 Assessment of program effectiveness 27

4.0 Conclusions and Recommendations 29

References 32

Appendix A: Education Statistics for SDPP Countries **40**

Appendix B: Risk Factors for Dropping Out **44**

Appendix C: Summary of Dropout Intervention Studies That Meet All SDPP Criteria **55**

Appendix D: Summary of Intervention Studies That Did Not Meet SDPP's Rigorous Criteria **124**

List of Tables

Table 1: Data on Dropouts

Table 2: Number (Percent) of Studies Finding Each Risk Factor Significantly Contributing to School Dropout

Table 3: Significant Risk Factors by School Level (United States Only)

Table 4: Relationship of Risk Factors and Types of Interventions

Table 5: Listing of Rigorously Evaluated Intervention Programs

Table 6: Categorization of Rigorously Evaluated Dropout Interventions

Table 7: Suggestions for Interventions from Developing Country Research

Table 8: Outcome Variables Affected by the Services of Each Rigorously Evaluated International Intervention

Table 9: Listing of Evaluated Dropout Intervention Programs Not Meeting All SDPP Evaluation Criteria

Table 10: Categorization of Dropout Intervention Programs That Did Not Meet SDPP Evidence-Based Criteria

Table 11: Outcome Variables Affected by the Services of Each Intervention That Did Not Meet SDPP Evaluation Criteria

Table A-1: Education Statistics for SDPP Countries

Table B-1: Risk Factors for Dropping Out in the U.S. and OECD Countries

Table B-2: Risk Factors for Dropping Out in Developing Countries

Table C-1: Dropout Intervention Programs That Meet All SDPP Criteria

Table D-1: International Dropout Intervention Programs That Did Not Meet All SDPP Criteria

List of Acronyms

ALAS	Achievement for Latinos through Academic Success, a dropout prevention program in the United States
BRIGHT	Burkinabe Response to Improve Girls Chances to Succeed, an educational improvement program in Burkina Faso
CREATE	Consortium for Research on Educational Access, University of Sussex
EdStats	Education Statistics
EMIS	Education Management Information System
FFE	Food for Education, a dropout prevention program in Bangladesh
HIV/AIDS	Human immunodeficiency virus/Acquired immune deficiency syndrome
NDPC	National Dropout Prevention Center
OECD	Organization for Economic Cooperation and Development
PACES	Programa de Ampliación de Cobertura de la Educación Secundaria, a dropout prevention program in Colombia
PATH	Programme of Advancement Through Health and Education, a dropout prevention program in Jamaica
PRAF	Programa de Asignación Familiar, a dropout prevention program in Honduras
PROGRESA	Programa de Educatión, Salud y Alimentación, a dropout prevention program in Mexico
QED	Quasi-experimental design
RCT	Randomized control/treatment design
SDPP	School Dropout Prevention Pilot
SEAMEO	Southeast Asian Ministers of Education Organization
UIS	UNESCO Institute for Statistics
UNESCO	United Nations Educational, Scientific and Cultural Organization

U.S.	United States
USAID	United States Agency for International Development

Executive Summary

The goal of the School Dropout Prevention Pilot (SDPP) program is to pilot and test the effectiveness of programs to prevent school dropout in four countries of USAID's Asia Middle East region: Cambodia, India, Tajikistan, and Timor Leste. In the first year of the project, SDPP must design these interventions, and then in the two subsequent years, implement those designs and evaluate their success in stemming the tide of children dropping out of school.

SDPP defines dropouts as students not completing the full basic education cycle in a country, and the project is tasked with the design of interventions for students in either primary or secondary school, depending on the needs of the individual country and the characteristics of its dropouts. The United Nations Educational, Scientific and Cultural Organization (UNESCO) statistics on the four focal countries show different patterns of school participation. Children in Tajikistan, on the one hand, rarely leave school during the primary years; their net enrollment rate for this cycle is 97 percent. The time of concern for children dropping out in that country is the secondary cycle. Cambodia, India and Timor Leste, on the other hand, have lower net enrollment rates for primary school than does Tajikistan – from about 76 to 90 percent – suggesting more difficulty for some groups of young children in accessing or staying in primary school, and the enrollment rates for secondary school are much lower.

The literature provides a clear picture of the characteristics of children who drop out of school. In the United States (U.S.) and OECD countries, these children are often low achievers, have been retained in grade, attend more sporadically, seem to lack interest or a commitment to school, and many are discipline problems. They frequently come from poor families. In the developing world, economic variables prevail, expressed as the economic status of the family or the need for a child to earn money or support the family through work at home. A distant second to financial concerns are four of the same descriptors seen as central in the U.S. and OECD countries: low achievement, retention in grade or overage, poor attendance, and lack of interest in school. In addition, dropouts in developing countries are more frequently female, often have a disability or health issue, attend schools at a relatively far distance from home, and live in a rural area.

The literature search uncovered 26 dropout prevention programs that met stringent criteria for topic relevance (including a measure of attending school, staying in school, or progressing in school), timeframe relevance (program and evaluation had to occur from 1990 to 2010), sample relevance (a focus on in-school students at risk of dropping out), and evaluation design relevance (a randomized control/treatment design or a strong quasi-experimental design). Six of the 26 operated in the U.S., and 20 were in developing countries.

The dropout programs in the U.S. are different from those abroad in the target groups for the interventions and in the types of services offered but similar in the methodology of the evaluations. That is, the U.S. programs were aimed mostly at middle and high school students while the majority of those implemented abroad had primary students as their target. Most of the studies in both groups that met our rigorous standards for design relevance were randomized

control designs, given their robust ability to differentiate effects across essentially equivalent groups of students.

The services offered in dropout programs in the U.S. differed from those in developing countries both in the specific choice of services to be offered and in the mix of services. There is a strong preference in the U.S. to provide both academic support of some kind and personal/social services, so that at-risk students can catch up in their mastery of subjects and receive supportive assistance to help them with whatever other more personal or social problems they are facing. Five of the six U.S. programs included some academic component; all had a personal/social component. In addition, half of the U.S. programs had a structural element, changing the learning environment by creating small class units or altering the curriculum to make it more relevant for students. None of these programs offered financial incentives or health services. In developing countries, however, financial incentives to send children to school were the prevalent services. Thirteen of the 20 rigorously evaluated programs (65%) provided cash transfers, scholarships, vouchers, food for families, school supplies, or school uniforms when children attended school regularly, and in 11 of these cases, a financial intervention was the sole type offered. Less than one-third of the international programs included academic, health, or structural components; only one offered personal/social support.

In terms of their effectiveness in increasing attendance, reducing the dropout rate or ensuring student progression in school, the results for interventions of different types are mixed. The rigorously evaluated financial interventions showed significant positive changes in 12 of 13 cases (92%), structural changes were successful in three of four cases (75%), academic support was effective in two of four instances (50%), and health interventions affected educational outcomes in two of five studies (40%). The one personal/social intervention was successful, but as it also contained every other type of intervention, it is stretching the case to say this type is 100 percent effective.

Three key lessons for SDPP evolved from this review of dropout prevention programs. First, the literature shows that certain factors that characterize children's behavior in school are related to dropping out, particularly low achievement, retention in grade or overage for grade, sporadic attendance, and lack of interest in school. Intervention programs can be designed to mitigate these particular problems of children in relation to schooling. Second, intervention programs often define target groups of children by such characteristics as gender (girls), disability or health issue, or their living in a rural area or at a long distance from school, since these characteristics also identify children more likely to drop out. A program designed for any specific location needs to address the factors of importance for children and families in that location. Finally, each intervention needs an evaluation that is methodologically strong, planned at the same time the intervention is conceived, and implemented as early and rigorously as possible.

1.0 Introduction

1.1 Purpose of the review

The objective of the School Dropout Prevention Pilot (SDPP) program is to provide evidence-based guidance to USAID missions and countries in Asia and the Middle East on student dropout prevention by piloting and testing the effectiveness of dropout prevention interventions in four target countries: Cambodia, India, Tajikistan and Timor Leste. In the first year of the project, SDPP staff in the U.S. and each of these countries must review the literature, identify rigorously evaluated intervention programs to reduce the number of dropouts, and design interventions with the highest probability of success for each of the target countries. In the two subsequent years of the project, staff must implement those projects and assess how well they are succeeding in stemming the tide of children dropping out of school before completing their basic cycle of education.

Conducting a review of the literature on dropouts at the beginning of the SDPP project serves several purposes. First, before designing any new initiative, it is critical to understand fully the problem to be addressed and the interventions that have been tried before. In attempts to reduce the stream of dropouts from schools around the world, researchers have closely examined the characteristics of children who drop out of school, as well as the contexts of their families, communities, and schools. Then they have tried a wide variety of intervention programs, some of which have succeeded better than others. Familiarity with this research will guide all further tasks in SDPP.

Second, program planners are becoming more and more aware of the importance of making program design decisions based on strong evidence of the effectiveness of similar approaches. Reviewing the results of evaluations of interventions that use rigorous evaluation techniques can inform the choices designers make about the contextual factors to consider in their design, the types of activities that make the most sense, and even the sorts of training that implementers need for a project to be effective.

Third, it is important for the success of any project that implementers communicate their rationale and gain broad support in the countries in which they are working. Spreading the knowledge to others about the services offered in a variety of interventions, the costs, and the impact can convince a significant group of people to support an in-country effort and, it is hoped, sustain it when the initial funding ends.

Fourth, a review of the literature may provide guidance to policymakers, other program designers and researchers in many countries who are grappling with the same set of issues around children leaving school without completing a cycle. Providing summaries of the studies that have been done, organizing ideas in user-friendly charts, and bulleting the major findings can help others as they find the best path to help children in their part of the world.

1.2 The definition of "dropout"

Before attempting to examine interventions, it is critical to come to a common understanding of the term "dropout," as it is to be used in SDPP. There is certainly no universal agreement on the definition. UNESCO (2005) considers dropouts to be "children who enrolled in school and subsequently left." To figure out exactly who these children are, it is important to carefully define (a) the levels of education that constitute "school" and (b) what it means to be "in school."

The request for task order proposals for SDPP defined dropouts as "students not completing the full basic education cycle in a country" (page 20), and specified that SDPP was to work with primary and secondary levels of education, thus providing a clear definition of the years of schooling to be considered. For the purpose of deciding whether to include non-formal programs in the definition of "school," SDPP will follow UNESCO's definition that specifies that children in non-formal education are counted as being in "school" only when the specific non-formal program is recognized as fully equivalent to formal primary education.

To figure out who is "out of school" and who is "in school," UNESCO defines the former group as those who had "no exposure to school during the school year in question" and the latter as children who attended at least one day of school. Thus, a child is considered a *dropout* if that child attended at least one day and at some subsequent point in the year ceased attending. As the Consortium for Research on Educational Access (CREATE, 2010) explains the phenomenon:

(1) A child may stop attending school owing to temporary economic needs. This child may be planting or harvesting crops for a month at a time, sent to a relative's home, or sent to work to earn money, all with the expectation of returning to school within the year when the task is accomplished.
(2) A child may not attend school following a critical event, such as the death of a parent or migration of the family, though there is an expectation that the child will return.
(3) A child who is out of school for a prolonged period may wish to return but would be "overage," which could cause embarrassment and, in some countries, may not be allowed according to policy.

Through understanding the pathways a child may take to end up out of school and accepting the UNESCO definition – based on a child's attendance during a school year – SDPP can design interventions that change children's direction and return them to school.

1.3 Methodology for the review and selection of interventions

To locate literature for the review, SDPP staff searched for references to projects dealing with "dropouts," "lack of attendance" and "retention in grade." The choice of "lack of attendance" derives from the UNESCO definition that clearly relies on a child's physical presence in or absence from school to determine his status. Chronic absenteeism is sometimes equivalent to dropping out, and as discussed later in the report, it is often a precursor to dropping out for good. Since retention in grade is frequently a school's response to children who are

attending little or not at all and is also a precursor to dropping out, SDPP also used "retention in grade" as a phrase in searches.

Staff searched for evaluation studies (a) on the Internet, (b) in library journals that deal with education and economics, and (c) on websites of organizations in the U.S. that deal with dropouts (e.g., the What Works Clearinghouse, the National Dropout Prevention Center, the High School Center), similar organizations abroad (e.g., OECD, CREATE, UNESCO, United Nations Children's Fund) and those that implement and evaluate international education projects (e.g., Academy for Educational Development, American Institutes for Research, Management Systems International, Education Quality Improvement Program, World Bank). They then followed-up on any references in these papers and reports. Much of what we found described the characteristics of students who dropped out, so to locate additional evaluations of dropout intervention programs, we also contacted researchers who were known to conduct such evaluations to be sure we had the most recent and complete reports of all projects. In addition, we tasked our in-country staff with finding data on dropouts and research articles within their countries.

To select effective intervention approaches, SDPP staff met for most of a day to review each potential evaluation. The "effective" interventions to be selected had to intend to affect a child's staying in school and to have been rigorously evaluated. Each had to meet the following criteria:

- *Topic/outcome relevance.* The evaluation must include a measure of school-age children staying in school (i.e., still in school at the end of the year or re-enrolled the next year), progressing in school (i.e., promoted to the next grade or completed the highest grade in the cycle), or attending school (i.e., regularly present), all indicators that children are not dropping out. Many interventions to promote school quality may also reduce the dropout rate, but studies of such programs would only be included in this literature review if they measure one of the three outcomes specified.
- *Timeframe relevance.* Each intervention program must be sufficiently recent to be applicable in 2011 and, thus, evaluated between 1990 and 2010.
- *Sample relevance.* Following the instructions of USAID for SDPP, the intervention must focus on in-school students at risk of dropping out and must describe the setting, duration of activities, services provided, staff training required, and, ideally, cost.
- *Study design relevance.* Using the criteria developed by the What Works Clearinghouse, a part of the U.S. Department of Education that has set strict standards for its evaluation of the effectiveness of school reform efforts, the evaluations of interventions must either be (a) randomized control/treatment designs, or (b) quasi-experimental designs using treatment and comparison groups equivalent at baseline and experiencing low attrition or using a regression discontinuity design with low attrition.

The 26 evaluations that met all criteria are considered "rigorously evaluated interventions" and are discussed at length in the report and summarized in Appendix C; the eight evaluations that did not meet these criteria are presented as well, though not in as much depth (see Appendix D).

Rigorous Evaluation Designs

In a *randomized control/treatment design* (RCT), eligible children are assigned to the treatment or control group using a random number table or by alphabetizing the children and assigning every other one to the treatment. In a *quasi-experimental design* (QED), researchers match schools or children using a relevant set of characteristics; for example, they may implement an intervention in one school and select a nearby school for comparison, ensuring that the children are as similar as possible in background characteristics and school experience (a "matched pairs" approach). A *regression discontinuity design* (RD) is generally used when all children eligible for an intervention receive that intervention. To define the treatment and comparison groups, researchers use children/families who score below but close to the line of eligibility and receive the intervention as the "treatment" and those who score above but close to the line and do not receive the intervention as the "comparison."

1.4 Organization of the report

The remainder of this report is divided into four sections. Section 2 presents a profile or description of the characteristics of children and youth who are at risk of dropping out. It begins with a discussion of the scope of the dropout problem, and then describes the risk factors that consistently arise in the literature to define the group of children most likely to leave school before completion. Some of these risk factors can be measured in early primary school; others appear to become significant as children enter the middle or high school years. The Section 3 discusses the evidence regarding intervention programs, suggesting a typology of intervention programs to prevent dropout, relating that typology to the risk factors discussed in the first section, examining the effective intervention programs at length, and assessing those programs that did not meet all the evaluation criteria. The Section 4 sets out recommendations for the design of dropout interventions derived from the research on characteristics of children who drop out and the interventions that help prevent that action.

Annexed to this report are four appendices with (a) a table showing key educational statistics for each of the four SDPP countries; (b) a table of the research papers discussing different risk factors for dropping out; (c) a table describing the 26 rigorously evaluated dropout interventions, followed by 1- to 2-page summaries of each; and (d) a table describing the eight interventions that did not meet SDPP rigorous evaluation criteria.

2.0 Profile and Characteristics of Children and Youth At-Risk of Dropout

2.1 The scope of the dropout problem

Over the past two decades many international initiatives have focused on providing universal access to basic education, and there has been notable progress. According to UNESCO (2010), the overall number of out-of-school children has decreased by approximately 38 percent over a six year period—from 115 million in 2001/02 to 71 million in 2007. An estimated 44 percent of out-of-school children never attend school. Of the 56 percent of children who do enter school, a high percentage is at risk of leaving before completing an education cycle or not transitioning to the next cycle.

The magnitude of the problem differs among and even within regions. In Sub-Saharan Africa, 64 percent of the out-of-school population of primary children is unlikely ever to enroll, while in East, South, and West Asia and the Pacific only 20 to 30 percent of out-of-school children are unlikely to enroll, but as many as 60 percent of them are dropouts. The prospects of staying in school are particularly low in India, Pakistan, Bangladesh and Nepal: 70 percent of out-of-school children in India have dropped out, 50 percent in Pakistan and 40 percent in Bangladesh and Nepal. In Central Asia, a greater percentage of the primary school age out-of-school population has dropped out (38%) than never enrolled (35%) or entered late (27%).

For the countries of focus for this task order, Table 1 shows the most recent data on net enrollment rates (NER) from the UNESCO Institutes for Statistics database and on dropout rates from the World Bank's EdStats database. Note that the data is from the latest year available, which differs across countries and databases. The group of countries shows two different patterns of enrollment. Children in Tajikistan, on the one hand, almost all enroll in school and rarely leave during the primary years (grades 1 to 9). The NERs in 2008 were 95 percent for girls and 99 percent for boys in this age group. Although statistics for the dropout rate were not available from the EdStats database, Tajikistan's Education Management Information System (EMIS) for 2009-10 showed a low primary dropout rate of less than 1 percent for grades 1 to 4 and 4 percent for grades 5 to 9. The NERs for secondary school (grades 10 and 11) were 77 percent for girls and 88 percent for boys, and national data reported a secondary dropout rate of 5 percent.[1] Although these enrollment rates are relatively high for secondary schools in developing countries, it is important to note that the rate for girls was considerable lower than that for boys. Thus, most children in Tajikistan do enroll, and schools do experience some dropout, which occurs largely during the years of secondary school when girls are more likely to drop out than boys.

[1] Dropout is calculated based on enrollment rates for all grades except grade 9. For grade 9, "in-grade" dropout is calculated based on the number of students that graduated from grade 9.

Table 1: Data on Dropouts[2]

Country	Primary Net Enrollment Rate		Primary Drop-out Rate		Secondary Net Enrollment Rate	
	Girls	Boys	Girls	Boys	Girls	Boys
Cambodia (2007)	88%	92%	43%	48%	32%	36%
India (2005)	87%	91%	35%	34%	NA	NA
Tajikistan (2008)	95%	99%	NA	NA	77%	88%
Timor Leste (2008)	74%	77%	32%	22%	33% (2007)	30% (2007)

Cambodia, India and Timor Leste, on the other hand, have somewhat lower overall net enrollment rates for primary school (from 74% for girls in Timor Leste to 92% of boys in Cambodia), and much higher primary drop-out rates (from 22% of boys in Timor Leste to 48% of boys in Cambodia), suggesting more difficulty for some groups of young children in accessing or staying in primary school. Cambodia and Timor Leste then show significantly lower net enrollment rates for secondary school children than was true in Tajikistan, with only about one-third of children enrolled, suggesting that relatively few children make their way to the end of that cycle. Dropout is a significant issue in these countries, beginning in primary school and increasing in magnitude as a child's age increases. (For a more complete display of these data, please see Appendix A.)

2.2 The factors that correlate with children dropping out

In examining the characteristics of children who drop out of school, it is useful to look at the extensive work done on children and youth in the U.S. because the research is thorough and intensive and in many cases meets stringent standards for research design and analysis. It is important to note that most school dropouts in the U.S. are children in secondary school, as the laws of the country require all children to be in school until at least age 16, and states employ truant officers to track down children who skip school on a regular basis. This information may be useful in countries where the dropout problem centers on older children.

Table 2 summarizes the significant risk factors for children dropping out of school as shown in both the U.S. literature and that from abroad. In general, the factors specify the direction or quality of each characteristic related to dropping out. In nearly all cases, the negative relation between the factor and dropout is the same for both developed and developing countries. The one exception is gender: in the U.S. and OECD countries it is boys who drop out more frequently, whereas in the developing world it is girls. The specific studies contributing to this table are listed in a chart in Appendix B, so that it is possible to identify exactly which risk factors are discussed in each study. For ease in interpretation, the risk factors on the charts are divided into four "domains:" individual, family, school, and community characteristics,

[2] Net Enrollment Rates are from the UNESCO Institute of Statistics database, Drop-out Rates are from the World Bank's ED Stats database. All represent the latest year of statistics available.

depending upon the source of the factor. Within each domain, factors are grouped by those that appear to belong together.[3]

The "individual" domain contains background characteristics such as age at enrollment and gender; early adult responsibilities at work and at home; social attitudes, values and behavior (i.e., what friends a student associates with and how); school performance (i.e., how well one succeeds); school engagement (i.e., the energy or motivation a child shows toward school); and school behavior (i.e., disciplinary issues). The "family" domain contains background characteristics of the family unit (e.g., low socioeconomic status, low education level of parents) and measures of family engagement with the school and commitment to the idea of educating their children (e.g., low contact with school, little importance placed on schooling). The "school" domain comprises structural measures (e.g., distance too far from child's home; lack of adequate facilities) and functional measures (e.g., low quality of teaching, lack of relevance of the curriculum). Finally, the "community" domain contains descriptors of the area from which the school draws students (e.g., urban or rural; presence of conflict, emergency, or politically fragile state). The items in bold in the two right-hand columns represent the factors cited by more than one-third of the reviewed articles.

Table 2: Number (Percent) of Studies Finding Each Risk Factor Significantly Contributing to School Dropout

Factor	U. S. & OECD Countries (N=16)	Developing Countries (N=26)
Individual Domain		
Individual Background Characteristics		
• Higher age at enrollment (overage for grade)	--	5 (19%)
• Gender[4]	3 (19%) – male	**9 (35%) – female**
• Presence of disability/frequent illness	5 (31%)	**12 (46%)**
Early Adult Responsibilities		
• Economic/opportunity cost/employment	5 (31%)	**19 (73%)**
• Marriage/Parenthood	5 (31%)	7 (27%)
Social Attitudes, Values & Behavior		
• High-risk peer group/social behavior	4 (25%)	--
• Admiration of those who left	--	3 (12%)
School Performance		
• Low achievement	**13 (81%)**	**9 (35%)**
• Retention/over-age for grade	**8 (50%)**	**10 (38%)**
School Engagement		
• Poor attendance	**11 (69%)**	8 (31%)
• Low educational expectations	3 (19%)	--
• Low commitment to school/lack of interest	**9 (56%)**	**10 (38%)**

[3] Note that different researchers use somewhat different definitions, so that the language in the table will not exactly match the language in their texts.
[4] In the U.S. and OECD countries, males dropped out more frequently; in developing countries, females.

Factor	U. S. & OECD Countries (N=16)	Developing Countries (N=26)
School Behavior		
• Misbehavior/delinquency	**8 (50%)**	2 (8%)
Family Domain		
Family Background Characteristics		
• Poor/low socioeconomic status	**8 (50%)**	**19 (73%)**
• Ethnic/caste/language minority	4 (25%)	7 (27%)
• Low education level of parents	4 (25%)	**12 (46%)**
• Not living with both natural parents	6 (38%)	7 (27%)
• Parent unemployed	2 (13%)	4 (15%)
• Large number of siblings, esp. under 5 years of age	3 (19%)	5 (19%)
• Family disruption (e.g., divorce, death)	4 (25%)	5 (19%)
• High family mobility	**6 (38%)**	7 (27%)
Family Engagement/Commitment to Education		
• Sibling has dropped out	3 (19%)	--
• Low contact with school	**6 (38%)**	2 (8%)
• Little importance placed on schooling	4 (25%)	5 (19%)
School Domain		
Structure		
• Large enrollment	3 (19%)	--
• Higher concentration of low-income & minority	3 (19%)	--
• Distance too far/too few schools	1 (6%)	**11 (42%)**
• Lack of facilities (e.g., latrines) & materials	--	4 (15%)
• Lack of post-primary schools	--	2 (8%)
Functioning		
• Lower school "quality"	1 (6%)	6 (23%)
• Unsafe (e.g., gangs, corporal punishment)	3 (19%)	6 (23%)
• Low quality of teaching/high teacher absence	--	5 (19%)
• Lack of relationship with adult in school	4 (25%)	--
• Language of instruction not child's mother tongue	1 (6%)	3 (12%)
• Lack of relevance of curriculum	4 (25%)	3 (12%)
• Lack of rigor in teaching	**6 (38%)**	--
Community Domain		
• Urban/slum area	--	1 (4%)
• Rural	--	8 (31%)
• Large numbers of poor, minority, foreign born, single parents, parents with low education	3 (19%)	1 (4%)
• Presence of conflict, emergency, politically fragile	--	4 (15%)
• Cultural notions of rites of passage that preclude school	--	2 (8%)

In the U.S. and OECD countries, there is a distinct cluster of factors that identify the children at risk of dropping out. These children are low achievers, having often been retained in grade; attend more sporadically; seem to lack interest or a commitment to school; and many are discipline problems. They frequently come from poor, mobile families, are not living with both natural parents, and their parents have little contact with the school. When asked, they claim that there is a lack of rigor in the teaching in their school. So, as developers are considering designs for interventions, it makes sense for them to focus on raising attendance and achievement and improving behavior.

In the developing world, the picture looks somewhat different. The two predominant factors, true in 73 percent of the studies, are economic variables. One, in the Family Domain, is the poverty of the family, and the other, in the Individual Domain, is the need for the child to earn money or perform chores at home. The importance of financial concerns, and the fact that they so often get in the way of children being able to attend school, is particular to developing countries, and it seems reasonable that designers of interventions should choose to directly address the issue of financial need. A distant second to financial concerns are a number of other items that are also cited relatively frequently. As is true in developed countries, children in developing countries who are more likely to drop out demonstrate low achievement in school and were retained in grade or are overage for grade; they also show a low commitment to school or lack of interest. In addition, dropouts in developing countries are often female, have a disability or frequent illness, have parents with little education, and attend schools at a relatively far distance from home. It should be noted, though, that the literature on dropouts in developing countries does not point to the behavioral problems seen among at-risk students in the U.S. and OECD countries.[5]

In the literature from all parts of the world, there is general agreement that dropping out of school is a process rather than a single event, a process that may begin early in the primary school years but not result in a failure to return to school until later (Hunt, 2008). In the U.S., the National Dropout Prevention Center (Hammond, 2007) has identified the factors that come to bear on children in primary, middle, and high school. Their findings are presented in Table 3. A **blank cell** for a particular age group means the factor has not been shown in any study to be statistically significant, a **"1"** means one study has found the factor significant, and an **"*"** means at least two studies have found the factor to be significant.

From this table, it is possible to see that the reasons for dropout differ for children in different grades. At least two studies have shown that primary school children who are low achievers, have been retained or are overage for their grade, have a relatively high rate of absence, and come from poor families are more likely to drop out, but other characteristics, such as peer influence or family commitment to education, are not yet involved. Early adult responsibilities, the influence of peers, and the child's and family's engagement with education become more relevant as children age. For the designers of interventions, then, it is important to address risk factors that are relevant for the age of the students to be involved.

[5] Behavioral problems may well exist in developing countries. Teachers in many countries use corporal punishment for infractions, and some of their difficulties with students may be the same as those cited in the U.S.

Table 3: Significant Risk Factors by School Level (United States Only)[6]

Risk Factor	Grades K-5	Grades 6-8	Grades 9-12
Individual Background Characteristics			
• Has a learning disability or emotional disturbance		1	1
Early Adult Responsibilities			
• High number of work hours		1	*
• Parenthood			*
Social Attitudes, Values, & Behavior			
• High-risk peer group		*	1
• High-risk social behavior		*	1
• Highly socially active outside of school			1
School Performance			
• Low achievement	*	*	*
• Retention/over-age for grade	*	*	*
School Engagement			
• Poor attendance	*	*	*
• Low educational expectations		*	*
• Lack of effort		1	1
• Low commitment to school		1	*
• No extracurricular participation		1	*
School Behavior			
• Misbehavior	1	1	*
• Early aggression	1	1	
Family Background Characteristics			
• Low socioeconomic status	*	*	*
• High family mobility		*	
• Low education level of parents	1	1	*
• Large number of siblings	1		1
• Not living with both natural parents	1	1	*
• Family disruption	1		
Family Engagement/Commitment to Education			
• Low educational expectations		*	
• Sibling has dropped out		1	1
• Low contact with school		*	
• Lack of conversation about school		*	1

Key: "1" indicates that the risk factor was found to be significantly related to dropout at this school level in one study; * indicates that the risk factor was found to be significantly related to dropout at this school level in two or more studies.

[6] National Dropout Prevention Center, page 6. Note that their list of risk factors has only individual and family characteristics and even in those domains differs somewhat from the list in Table 1.

3.0 Interventions to Prevent Dropout

3.1 A typology of interventions

In parallel with the plethora of potential reasons for children to drop out of school are the myriad programs that have been devised to prevent dropout. Interventions range from relatively straightforward actions like the provision of financial assistance to poor families through scholarships or cash transfers to very elaborate programs with multiple interventions involving academic, social/personal, and structural changes. An example of this latter type of complex program is the *Accelerated Middle Schools* implemented in the U.S. which encourages children who are working behind grade level by placing them in small classes that cover two years of the curriculum in one school year, providing tutoring to individuals after class to help them master the material, giving counseling on social and personal issues, and involving families.

In general, interventions may be characterized by five types of activities, each type addressing a different sort of issue:

- *Academic* interventions directly address student performance issues by enhancing the curriculum to better meet student needs, providing academic tutoring outside of class, or incorporating special classes (e.g., computer-assisted learning, problem-solving skills).
- *Financial* interventions attempt to alleviate the burden of school costs or make up for the opportunity cost of students continuing in school rather than helping at home or earning money from work.
- *Health* interventions are based on the assumption that children cannot learn optimally if they are struggling with health issues that reduce their ability to concentrate or cause absenteeism, so they may provide vaccinations, deworming, or simply feed children.
- *Personal/social* interventions address attitudes, values, or personal situations that are getting in the way of learning by using such techniques as intensive case management, counseling, peer discussion groups, family outreach, internship programs, or mentoring by school staff.
- *Structural* interventions change policies that seem to interfere with students attending, progressing, or completing school, instituting such policies as flexible school schedules to accommodate distance to school or the growing season, automatic promotion, requiring the use of the children's mother tongue as the language of instruction in primary school, or empowering a parent-teacher group to check on school attendance and quality.

Table 4 presents an attempt to line up the risk factors with potential interventions. The domains of risk factors are row labels next to which are types of interventions that address that domain of risk factors and sample activities. Note that, in many cases, multiple types of interventions may be useful to address an issue. For example, when children are asked to take on adult responsibilities, an intervention may alleviate these responsibilities by providing money to defray the funds lost because the child does not take a job (a financial intervention) or by establishing a child care center in the school (a structural intervention).

Table 4: Relationship of Risk Factors and Types of Interventions

Domain of the Risk Factor	Type of Intervention	Examples
Individual		
Individual background characteristics	Academic Health Personal/social	Tutoring for girls Deworming Advocacy for child with disability
Early adult responsibilities	Financial Structural	Scholarships Child care at school
Social attitudes, values & behavior	Personal/social	Mentoring
School performance	Academic	Two years of curriculum in one calendar year
School engagement	Financial Personal/social	Cash transfer Counseling
School behavior	Personal/social	Intensive case management
Family		
Family background characteristics	Academic Financial Personal/social	Adult literacy program Food for families Referrals to services
Family engagement in education	Personal/social	Strengthen PTA
School		
Structure	Structural	Improve school facilities
Functioning	Structural	Teach in child's mother tongue
Community: No matched intervention; factors should be accepted as the context for any intervention		

The table lists interventions of all five types aimed at risk factors in the *individual* domain. This makes sense, as it is these factors that were universally shown to be important predictors of dropping out, and it is the children, the "individuals," that schools directly serve and over whom they have the most control. For example:

- An academic intervention may succeed in improving a child's level of achievement;
- A health intervention may mean the child can attend school regularly and succeed more readily;
- A financial intervention may allow a family to forego the earnings of a child;
- A personal/social intervention by an adult may alleviate difficulties at home; and
- A structural change, like dropping a policy of automatic failure for absence during harvest season, may help children stay in the right grade for their age.

Three types of interventions address *family* risk factors, but the examples suggest such interventions may indirectly work to prevent dropout. The academic intervention of offering an adult literacy program may benefit a parent, but need not significantly affect the child. The financial intervention of sending home food, by itself, is not going to alleviate a family's

poverty, and the child who has "earned" the food may not have the opportunity to eat it. The personal/social intervention of providing referrals may or may not work, as parents have the choice of using the referral or not.

Only structural interventions aim to change the *school*, including its organization or functioning. Such actions as dividing students into small learning communities, focusing the curriculum on careers, upgrading facilities, or working on teacher absenteeism may increase student interest and performance and keep them from dropping out. Generally, interventions do not try to change the *community* descriptors (e.g., urban/rural, low-income, high mobility) but take them as "given," as a part of the context, and make sure the intervention fits appropriately.

3.2 Results of rigorous evaluations of dropout intervention programs

3.2.1 Selection of interventions

While many interventions address the problem of dropout, the SDPP literature review found only 26 that have been rigorously evaluated to ensure that their effectiveness could be attributed to the intervention. As explained earlier, the SDPP criteria of effectiveness include the following:

- *Topic relevance* – measured students' attending school, staying in school, or progressing in school
- *Timeframe relevance* – implemented and evaluated between 1990 and 2011
- *Sample relevance* – focused on in-school students at risk of dropping out
- *Study design relevance* – used a randomized control/treatment design, a quasi-experimental design with treatment and comparison groups equivalent at baseline, or regression discontinuity. All had low attrition.

Note that while these criteria ensure that an intervention has been rigorously assessed, they do not ensure that the program is *effective*. It is still possible that the results of such an evaluation will be that an intervention does not work to increase attendance, reduce dropouts, or assist children to progress in school. The findings discussed below differentiate those that were found to be effective from those that were not.

Table 5 provides the names and brief descriptions of the 26 interventions that met all criteria. Those implemented in the United States are listed alphabetically by the title of the intervention program; those in developing countries are listed alphabetically by country name. A more extensive descriptive table and a 1- to 2-page summary of each intervention are presented in Appendix B.

Table 5: Listing of Rigorously Evaluated Interventions

United States	Developing Countries
Accelerated Middle Schools: Intensive academics in small classes, counseling (Dynarski et al., 1998)	Brazil, *Bolsa Familia*: Cash transfers (Glewwe & Kassouf, 2010)
	Burkina Faso, *BRIGHT*: Build and equip new schools, mobilize communities, provide cereal for families and school supplies, daily lunch, and mentoring for students (Levy et al., 2009)
Achievement for Latinos through Academic Success (ALAS): Problem-solving skills, case management (Larson & Rumberger, 2005)	Cambodia: Scholarships (Filmer & Schady, 2009)
	Colombia: Conditional cash transfers (Barrera-Osorio et al., 2008)
Career Academies: Coursework organized around careers, "school within a school," internships (Kemple & Snipes, 2000; Kemple, 2004)	Colombia, *PACES*: Vouchers for private schooling, conditional on progressing in school (Angrist et al., 2002)
	Honduras, *PRAF*: Conditional cash transfers (Glewwe & Olinto, 2004)
Check & Connect: Tutoring, case management (Sinclair et al., 1998, 2005)	India: Increase teacher attendance (Duflo et al., 2010)
	India: Tutoring or computer-assisted learning (Banerjee et al., 2007)
Talent Development High Schools: College preparation curriculum, small classes, support services (Kemple et al., 2005)	Jamaica, *PATH*: Conditional cash transfers (Levy & Ohls, 2007)
	Kenya: Payment for school uniforms, HIV/AIDS intervention (Duflo et al., 2006)
	Kenya: Teacher bonuses for high student test scores (Glewwe et al., 2003)
Twelve Together: Homework assistance, discussion groups (Dynarski et al., 1998)	Kenya: Textbooks provided to schools (Glewwe et al., 2007)
	Kenya: Follow-up to girls' scholarship program (Friedman et al., 2011)
	Kenya: Deworming (Miguel & Kremer, 2004)
	Madagascar: Operational tools and training for administrators, teachers and parents (Duflo et al. 2008)
	Malawi: Conditional cash transfers for girls (Baird et al., 2010)
	Mexico, *PROGRESA*: Conditional cash transfers (Schultz, 2000)
	Nepal: Distribution of menstrual sanitary products (Oster & Thornton, 2009)
	Pakistan: Conditional cash transfers to girls (Chaudhury & Parajuli, 2006)
	Philippines: Learning materials or school feeding, with or without parent-teacher partnerships (Tan et al., 1999)

3.2.2 Description of rigorously evaluated interventions

Table 6 provides a categorization of the 26 rigorously evaluated programs, displaying information on the target groups, methodology, and types of services included.[7] The dropout programs in the U.S. are different from those abroad in the target groups for the interventions and in the types of services offered but similar in the methodology of the evaluations. That is, the U.S. programs are aimed at middle and high school students while the majority of those implemented abroad have primary and middle-school students as their target. This may be because children are required to attend school in the U.S. until at least age 16, so are unable to complete the process of dropping out in the primary grades, whereas there is no such enforced age requirement in developing countries. Randomized control designs are the preferred method of evaluation in all locations, given their robust ability to differentiate effects across essentially equivalent groups of students.

Table 6: Categorization of Rigorously Evaluated Dropout Intervention Programs

Characteristic	Number of Dropout Programs	
	U.S. (N=6)	**Int'l (N=20)**
Target Group[8]		
• Primary/lower primary school (grades 1-5)	0 (0%)	**13 (65%)**
• Middle/upper primary school (grades 6-8)	**4 (66%)**	**13 (65%)**
• High/secondary school (grades 9-12)	3 (50%)	5 (25%)
Methodology		
• Randomized control design	**5 (83%)**	**14 (70%)**
• Quasi-experimental design	1 (17%)	6 (30%)
• Other	0 (0%)	0 (0%)
Type of Services[9]		
• Academic (e.g., tutoring, parent literacy, textbooks)	**5 (83%)**	4 (20%)
• Financial (e.g., cash transfers, food for families, scholarships)	0 (0%)	**13 (65%)**
• Health (e.g., Deworming, school feeding, vaccinations)	0 (0%)	5 (25%)
• Personal/social (e.g., mentoring, counseling, case management)	**6 (100%)**	1 (5%)
• Structural (e.g., small learning communities, monitoring teacher presence, administrative tools and training)	3 (50%)	4 (20%)

[7] Appendix C also includes information on the costs of the interventions; however, the data supplied tend to summarize only the direct costs of a product or service (e.g., the amount of a scholarship or cash transfer to a family, the cost of medication or a school uniform), which are a small part of the total cost of a program. That is, they leave out the set of administrative and operational costs for line items such as staff salaries, management of cash transfers, locating families that move, training teachers, building school management committees, or the travel costs of health providers to administer treatment. The cost information is simply not comparable across projects or particularly meaningful in setting costs for future projects.

[8] More than one age group may be targeted in an intervention.

[9] More than one type of service may be offered in an intervention.

The services offered in dropout programs in the U.S. differ from those in developing countries both in the specific choice of services to be offered and in the mix of services. There is a strong bias in the U.S. to provide both academic support and personal/social services, so that at-risk students can catch up in their mastery of subjects and receive supportive assistance to help them with whatever other more personal or social problems they are facing. In fact, the What Works Clearinghouse (Dynarski et al., 2008) recommends exactly these types of services for the development of U.S. dropout intervention programs:

- Provide academic support and enrichment to improve academic performance.
- Personalize the learning environment and instructional process.
- Provide rigorous and relevant instruction to better engage students in learning and provide the skills needed to graduate and to serve them after they leave school.
- Assign adult advocates to students at risk of dropping out.
- Implement programs to improve students' classroom behavior and social skills.

The first three describe what we have been calling "academic" services as they enhance the learning process; the final two are "personal/social" as they describe efforts to support appropriate student behavior.

The use of both academic and personal/social services is also recommended in an Education Policy Brief from the U.S.'s Center for Evaluation & Education Policy (Stanley & Plucker, 2008), which says that the keys to any successful dropout prevention program are relationships, relevance, and rigor:

> "…students must feel a part of the school community and have a strong relationship with one or more adults in the school. Secondly, the students must understand that what they are learning is connected, i.e., is relevant, to something larger than the present time and place. And thirdly, students must be challenged intellectually by a rigorous curriculum." (page 2)

Along the lines of these recommendations, five of the six rigorously evaluated programs in the U.S. included some academic component; all had a personal/social component. In addition, half of the U.S. programs had a structural element, changing the learning environment by creating small class units or restructuring the curriculum to make it more relevant for students. None of the U.S. programs offered financial incentives or health services.

It is important to note that the What Works Clearinghouse has evaluated dropout programs in U.S. middle and high schools, in a context where (a) children at risk of dropping out exhibit both learning and behavioral problems, (b) children must attend school through at least age 16, and (c) there are staff and teachers available for assignment to special academic programs and support services. Such is not the context in much of the developing world, and, as expected, a different set of ideas for interventions is more appropriate to the differing context.

In developing countries, financial incentives to encourage families to send children to school are the favored services, usually in the form of money given to the family and sometimes

money given to the school. Thirteen of the 20 cited programs (65%) provided conditional cash transfers, scholarships, vouchers, food for families, school supplies, school uniforms or incentives for teachers, generally with the stipulation that children attend school regularly and/or register for the following year. In 10 of these cases, a financial intervention was the sole type offered. This is more than reasonable, since the outstanding risk factors for students to drop out in developing countries are financial in nature. Less than a third of the international programs included academic, health services, or structural changes; only one (Levy et al., 2009, the BRIGHT program in Burkina Faso) offered personal/social support.

In her extensive review of the literature on dropouts in developing countries, Hunt (2008, pages 47-50) lists ideas for interventions in the developing world, shown in Table 7. She has pulled ideas from a variety of small and large research endeavors, not stipulating that the research meet particular quality guidelines or even have an accompanying evaluation.[10] Her ideas may be divided among three of the categories SDPP is using (i.e., academic, financial, and structural). Note that she does not suggest the use of health or personal/social interventions. The context of the developing world is simply different from the U.S.; she is focusing on educational interventions (not health) and the particular problems seen in the developing world – of which misbehavior is not identified as a major issue.

Table 7: Suggestions for Interventions from Developing Country Research[11]

Developing Countries	
Academic Factors	
1.	Establish *preschool centers*.
2.	Offer *literacy program for uneducated mothers*.
3.	Provide *alternative forms of education* (e.g., school on wheels).
Financial Support	
4.	In times of income shocks, provide *access to credit*.
5.	Provide *conditional supports* (e.g., monetary, food) if children enroll and stay in school.
6.	Provide *unconditional supports* (e.g., monetary, food).
7.	Provide *scholarships.*
Structural Interventions	
8.	Design *flexible school timetables* around children's work schedules.
9.	Adopt a policy of *automatic promotion* rather than repetition.
10.	Offer *first language/local language* as languages of instruction in the early years.
11.	Ensure communities have *secondary education opportunities*.
12.	Improve *monitoring and accountability* through school governing bodies.
13.	Involve *the community* in all aspects of education.

Four of the 26 rigorously evaluated interventions addressed one of the academic factors included on Hunt's list: the BRIGHT program in Burkina Faso reviewed by Levy et al. (2009) included a literacy program for parents (#2 on Table 7) and built community schools for children (#3); the India program evaluated by Duflo et al. (2010) included tutoring of children by a para-

[10] SDPP made extensive use of Hunt's bibliography in its selection of evaluations for this report.
[11] F. Hunt, pages 47-50.

teacher or computer-assisted learning (#3); and the program in the Philippines assessed by Tan et al. (1999) offered multi-level learning materials to teachers (an enhancement of the regular form of education, as suggested in #3). The Kenya program evaluated by Glewwe et al. (2007) added an option to Hunt's list by providing textbooks to schools that had very few. The books were intended to improve children's academic performance, and so are included as an "academic" intervention, though they might also belong in the next category of financial supports.

Thirteen of the 26 programs adopted one or another of the financial supports suggested by Hunt:

- Conditional supports were offered in Burkina Faso (Levy et al., 2009) in the form of free cereal;
- Conditional cash transfers were used in Brazil (Glewwe & Kassouf, 2010), Colombia (Barrera-Osorio et al., 2008), Colombia (Angrist et al., 2002), Honduras (Glewwe & Olinto, 2004), Jamaica (Levy & Ohls, 2007), Malawi (Baird et al., 2010), Mexico (Schultz, 2000), and Pakistan (Chaudhury & Parajuli, 2006); and in Kenya (Glewwe et al., 2003) where teachers received bonuses if students performed better on exams; and
- Scholarships were offered in Cambodia (Filmer & Schady, 2009) and Kenya (Friedman et al., 2011).

The financial service offered in the 13th of the rigorously evaluated programs was an *unconditional* award. That is, the Kenya intervention evaluated by Duflo et al. (2006) provided all students enrolled at the beginning of the year with a school uniform. In addition to its conditional support, the BRIGHT program in Burkina Faso offered an unconditional support by giving children school supplies.

Finally, three of the four rigorously evaluated programs with structural components followed Hunt's suggestion to mobilize parents or communities in support of education: Burkina Faso (Levy et al., 2009), Madagascar (Nguyen & Lassibille, 2008) and the Philippines (Tan et al., 1999). In fact, the BRIGHT program in Burkina Faso went beyond Hunt's recommendations in the construction of facilities and the training of local partners to support the school. The idea of increasing teacher attendance by having students take their picture each morning and afternoon, introduced in India and evaluated by Duflo et al. (2010), is another structural option, though it was not suggested by Hunt.

3.2.3 Assessment of program effectiveness

Twenty-one of the 26 rigorously evaluated programs were assessed as effective in addressing at least one of the issues of attendance, staying in school, or progressing in school. The six U.S. programs were selected from those vetted by the What Works Clearinghouse because they had been shown to be effective at decreasing the dropout rate, so we have not included them on the table. However, the search of international interventions did find differences in effectiveness. Table 8 displays **in bold** the dependent variables that were positively influenced by each international intervention. Variables not in bold were also measured, but no differences were found between the treatment and comparison groups.

Table 8: Outcome Variables Affected by the Services of Each Rigorously Evaluated International Intervention

Intervention	Effectiveness of Each Type of Service				
	Academic	Financial	Health	Personal/ Social	Structural
Brazil, *Bolsa Familia*: Cash transfers (Glewwe & Kassouf, 2010)		**Stay in school; progress in school**			
Burkina Faso, *BRIGHT*: Build and equip new schools, mobilize communities, provide cereal for families; school supplies, daily lunch, and mentoring for students (Levy et al., 2009)	**Attend school**	**Attend school**	**Attend school**	**Attend school**	**Attend school**
Cambodia: Scholarships (Filmer & Schady, 2009)		**Stay in school**			
Colombia, *PACES*: Vouchers for private schooling (Angrist et al., 2002)		**Progress in school**; stay in school			
Colombia: Cash transfers (Barrera-Osorio et al., 2008)		**Attend school; stay in school**			
Honduras, *PRAF*: Cash transfers (Glewwe & Olinto, 2004)		**Attend school; stay in school; progress in school**			
India: Tutoring or computer-assisted learning (Banerjee et al., 2007)	Attend school; stay in school				
India: Increase teacher attendance (Duflo et al., 2010)					Attend school; stay in school
Jamaica, *PATH*: Cash transfers (Levy & Ohls, 2007)		**Attend school**			
Kenya: Payment for school uniforms; HIV/AIDS intervention (Duflo et al., 2006)		**Stay in school**	Stay in school		

Intervention	Effectiveness of Each Type of Service				
	Academic	**Financial**	**Health**	**Personal/ Social**	**Structural**
Kenya: Teacher bonuses (Glewwe et al., 2003)		Stay in school			
Kenya: Textbook provision (Glewwe et al., 2007)	Attend school; stay in school; progress in school				
Kenya: Girls scholarship program (Friedman et al., 2011)		**Stay in school; progress in school**			
Kenya: Deworming (Miguel & Kremer, 2004)			**Attend school**		
Madagascar: Administrative tools & training (Duflo et al., 2008)					**Attend school**
Malawi: Cash transfers for girls (Baird et al., 2010)		**Stay in school**			
Mexico, *PROGRESA*: Cash transfers (Schultz, 2000)		**Stay in school**			
Nepal: Menstruation supplies (Oster & Thornton 2009)			Attend school		
Pakistan: Cash transfers to girls (Chaudhury & Parajuli, 2006)		**Attend school**			
Philippines: Learning materials or school feeding, with or without parent-teacher partnerships (Tan et al., 1999)	**Stay in school**		Stay in school		**Stay in school (with academic services)**
Number (percent) of interventions of a type found to be effective	2/4 (50%)	12/13 (92%)	2/5 (40%)	1/1 (100%)	3/4 (75%)

Academic interventions. Two of the four academic interventions in the developing world were effective at reducing dropouts. Both of them combined an academic component with at least one other program component: Levy et al. (2009) in Burkina Faso reviewed the BRIGHT program, funded by USAID, which brought schools to villages that had not had one. The project oversaw all five types of services, as follows:

- Academic – A primary school opened in a village where none had existed, and adults were offered literacy training;
- Financial – With 90 percent attendance, girls received 8 kg of dry cereal to take home and all students received textbooks and school supplies;
- Health – Daily school lunches were provided to all students;
- Personal/social – Mentoring was offered to girls; and
- Structural – Construction of school facilities included housing for three teachers, separate latrines for boys and girls, and a water pump; communities were mobilized to support the school; and training was provided to local partners so they could also help the school.

The evaluation showed that this combination of components improved attendance by about 16 percentage points over that in comparison schools.

The second successful academic intervention was that reviewed by Tan et al. (1999), an experiment in the Philippines that offered schools one of four options:

(1) Multi-level learning materials for teachers to use,
(2) School lunches,
(3) A combination of multi-level learning materials with the encouragement of parent-teacher partnerships, or
(4) A combination of school lunches with parent-teacher partnerships.

The multi-level learning materials, especially when combined with the parent-teacher partnerships, decreased the dropout rate by at least 10 percent.

The academic interventions that did not show positive results are the one in India evaluated by Banerjee et al. (2007) and the one in Kenya evaluated by Glewwe et al. (2007). Banerjee et al. evaluated two academic approaches in low-income neighborhoods in urban India: (1) providing two hours of remedial tutoring every day to students or (2) offering a computer program two hours a week to enhance math skills. Neither improved attendance nor lowered the dropout rate. Glewwe et al. evaluated supplying textbooks to schools that had few and found no increase in attendance or reduction in repetition or dropout. So, academic services offer some promise internationally but with only four rigorously evaluated, the results are definitely mixed. A host of potential approaches are still untried or not rigorously evaluated.

Financial interventions. Twelve of the 13 financial interventions increased the rate of attendance, decreased the dropout rate, and/or assured the progression of students in school. Providing cash or vouchers to students and their families, conditional upon attendance in school or re-enrolling in the next year of schooling, has proved to be an effective way to keep children in developing countries in school. The only financial intervention that was not effective was the

Kenya program that awarded bonuses to teachers whose students scored highly on standardized tests (Glewwe et al., 2003), a very different sort of program from the other, largely cash transfer programs.

> The PROGRESA program in Mexico offered cash transfers to families with 3rd to 9th graders in 495 poor rural communities, provided a child attended school at least 85% of the time. The enrollment rate in 7th grade, a key transition year, increased by 11.1 percentage points as a result of the program (Schultz, 2000).

Health interventions. Of the five health interventions among the international programs, two increased attendance or lowered the dropout rate and three did not. The BRIGHT program in Burkina Faso (Levy et al., 2009) is scored as effective, as it included the provision of school lunches among the multitude of services offered. But it is not clear that the lunches, on their own, would have had a positive impact. Tan et al. (1999), evaluating a program in the Philippines, found school feeding had no discernable impact on the dropout rate.

The deworming approach evaluated by Miguel and Kremer (2004) in Kenya was the second effective health approach, in that the provision of deworming medication decreased the level of infection among school children, which resulted in less absenteeism. However, the other intervention aimed at disease reduction, the HIV/AIDS intervention of training teachers on an HIV/AIDS curriculum and encouraging them to hold discussions with students in Kenya (reviewed by Duflo et al., 2006), had little effect on the dropout rate, and the intervention in Nepal where menstrual cups were distributed to adolescent girls had little effect on school attendance. These results would seem to suggest that health interventions are more likely to affect health status than educational outcomes.

Personal/social interventions. Only the BRIGHT program in Burkina Faso tried a personal/social approach: it included a mentoring program for girls in its thorough intervention to upgrade primary education. Though the program as a whole was successful at improving attendance, it is not clear that the mentoring program made a difference in comparison to the construction of school facilities and the provision of school supplies, cereal to take home, and lunch each day. It may have, but researchers would need to assess the personal/social intervention without the other components to be certain of its effects.

Structural interventions. The four structural interventions had some positive results. The two that were solely structural, the Duflo et al. (2010) evaluation of the attempt to decrease teacher absenteeism in India and the Duflo et al. (2008) evaluation of the provision of tools and training to administrators, teachers, and parents in Madagascar, had mixed results. The India project was successful at encouraging teachers to attend school but not successful at increasing student attendance or lowering the dropout rate. The Madagascar project increased student attendance if and only if local school staff had training on the administrative tools along with parents. Providing the tools only at the district and subdistrict levels had no discernable effect on attendance.

To increase teacher attendance, cameras were given to half of the 113 non-formal primary schools in India that were operated by an NGO. Each camera stamped the date and time on each photo, a function that was hard-coded and could not be altered. A student was expected to take a picture of the teacher and a group of students at the beginning and end of each day. Teachers were paid on the basis of attendance, as proved by photographs (Duflo et al., 2010).

The other two interventions that employed a structural change mixed that change with other types of services, and the entire packages were successful at increasing attendance or reducing dropout. Specifically, the BRIGHT program in Burkina Faso (evaluated by Levy et al., 2009) created a completely different environment for education through building schools, teacher housing, latrines and a canteen, as well as mobilizing the community to support the school, thus offering academic, financial, health, and personal/social services in addition to structural improvements. The children in BRIGHT schools showed an improvement of about 16 percentage points in attendance. The Philippines experiment (assessed by Tan et al., 1999) included the establishment of parent-teacher partnerships in two of its four options, and these partnerships seemed to add to the effectiveness of the academic services offered.

Unfortunately, the set of 20 rigorously evaluated interventions in developing countries contains few structural changes out of all the possible ones, so it is difficult to make a generalization about the success of such approaches: more need to be tried.

3.3 Description of dropout intervention programs not meeting SDPP criteria

3.3.1 Selection of interventions

Eight other recent interventions in developing countries met the SDPP criteria for topic relevance, time frame relevance, and sample relevance.[12] That is, all included the following:

- Measures of attending school, staying in school, and/or progressing in school;
- Implementation and evaluation between 1990 and 2010; and
- A focus on in-school students at risk of dropping out.

However, these interventions did not meet the criteria for study design relevance, either because they used a random control/treatment design but had significant attrition, or a quasi-experimental design without equivalence of baseline groups, or neither of these designs. Table 9 provides brief descriptions of these interventions; a chart with additional information is included as Appendix C.

[12] Because hundreds of dropout intervention programs have been tried in the U.S. and not rigorously evaluated, SDPP has decided to focus only on programs in the developing world in this section.

Table 9: Listing of Evaluated Dropout Intervention Programs Not Meeting SDPP Evaluation Criteria

Country	Evaluator(s)	Types of Services
Bangladesh: *Food for Education Program*	Ahmed & del Ninno (2002); Meng & Ryan (2007)	**Financial**: Monthly grain ration of wheat or rice conditional on school attendance
Bangladesh: *Female Stipend Program*	Khandker et al. (2003)	**Financial**: Conditional cash transfer
Brazil	Graeff-Martins et al. (2006)	**Academic:** Teacher workshops **Personal/social**: Interactions with families; music contest on dropout; helpline; program on advantages of staying in school; mental health assessments of absentees
India: *Shankarpalle Experiment*	Reddy & Sinha (2010)	**Academic:** Summer school for overage children **Structural:** Campaign to enroll every child; policy changes for automatic promotion, enrolling children throughout the year, and allowing primary schools to extend to Class VII
Indonesia	Cameron (2009)	**Financial**: Scholarships conditional on continued enrollment
Peru	Santiago & Chinen (2008)	**Health:** School breakfast
Philippines *Project NODROPS*	SEAMEO (1995)	**Academic:** Expanded learning system with study groups & tutoring; teacher training; home-based school option; programs for drop-outs; education for parents **Financial:** Free school supplies and medical care for students at risk of dropping out **Health:** Gardening to support free school snacks **Personal/social:** Early warning of potential dropouts; close parental monitoring **Structural:** Apprehension of truants; campaign on importance of education
Zambia	Chatterji et al. (2010)	**Academic:** Community school **Financial**: Payment of school fees; provision of supplies **Health**: School feeding; clinic services

3.3.2 Description of interventions not meeting SDPP criteria

Table 10 summarizes these eight interventions to keep children in school, displaying the target group, evaluation methodology, and types of services provided. As was true of the earlier group of interventions that met rigorous criteria, most of these interventions are aimed at primary school children (88%), and more involved a financial intervention (62%) than any other type. However, there were two differences between this group of studies and the ones in the group characterized by rigorous evaluations. First, as expected since they were judged not to meet the methodological criteria established for rigorous evaluations, these studies generally used quasi-experimental designs rather than random assignment, often without equivalence of treatment and control groups at baseline. Secondly, these studies more frequently involved academic and personal/social services: 50 percent of the programs that did not meet SDPP evaluation criteria had academic components as opposed to 21 percent of the rigorously evaluated; 38 percent included personal/social services as opposed to seven percent of the rigorously evaluated interventions.

Table 10: Categorization of Dropout Intervention Programs That Did Not Meet SDPP Evidence-Based Criteria

Characteristic	Number (Percent) of Dropout Programs (N=8)
Target Group[13]	
• Primary school	**7 (88%)**
• Middle school	3 (38%)
• High school	3 (38%)
Methodology	
• Randomized control design	--
• Quasi-experimental design	**7 (88%)**
• Other	1 (12%)
Type of Services and Effectiveness[14]	
• Academic (e.g., tutoring, parent literacy)	4 (44%)
• Financial (e.g., cash transfers, food for families, scholarships)	**5 (62%)**
• Health (e.g., Deworming, school feeding, vaccinations)	3 (38%)
• Personal/social (e.g., mentoring, counseling, case management)	3 (38%)
• Structural (e.g., small learning communities, monitoring teacher presence)	2 (25%)

[13] More than one age group may be targeted in an intervention.
[14] More than one type of service may be offered in an intervention.

Academic interventions. The four programs with academic components introduced somewhat different services from the rigorously evaluated interventions:

- Chatterji et al. (2010) explored the success of *community schools* for orphans and vulnerable children in Zambia.
- Graeff-Martins et al. (2006) examined a multi-faceted intervention in Brazil that included *teacher workshops* on child development and managing emotional and behavioral disorders.
- Reddy and Sinha (2010) reviewed the Shankarpalle Experiment in India that involved a *summer school for overage children*, along with many structural changes.
- SEAMEO (1995) described the NODROPS project in the Philippines that implemented *an expanded learning system* for children, in-service teacher training, and non-formal education for parents in its broad-based reform.

Personal/social interventions. Three of the four programs with academic components also contained personal/social components. All of these brought additional forms of interventions to those offered in the rigorously evaluated interventions: counseling (in addition to HIV/AIDS prevention education) in Zambia (Chatterji et al., 2010); extensive interaction with parents and students on dropout issues and mental health assessments of chronically absent students in Brazil (Graeff-Martins et al., 2006); and an early warning system to identify those at risk of dropping out and close parental monitoring in the Philippines (SEAMEO, 1995).

Structural interventions. Both of the programs that included structural interventions added public campaigns to the mix of activities. In India's Shankarpalle Experiment, evaluated by Reddy and Sinha (2010), the project launched a campaign to abolish child labor and enroll every child in school. In the Philippines NODROPS program, evaluated by SEAMEO (1995), the campaign was on the importance of education and the problems that follow dropping out.

Other structural activities included changes in school policies that were directly viewed as contributing to the dropout problem. In the Shankarpalle Experiment, three new policies were adopted:

- Automatic promotion from Class I to Class II which cleared the large bottleneck of children who repeated Class I many times;
- Rolling admission to school throughout the year, rather than the policy of only admitting children at the beginning of each year; and
- Permission for primary schools to extend their offerings to include Class VII, so more children had a convenient local school to attend.

In Project NODROPS, the schools changed their policy regarding absent students from one of just recording the absences to an active pursuing of truants.

Finally, the Shankarpalle Experiment implemented a new program called "Clear class one" for three consecutive summers to prepare older children who were in Class I to move to higher grades in accordance with their age, and to have children of only the five-six years age group in Class I.

Health interventions. School feeding programs were offered in each of the three health interventions: in Peru, it was school breakfasts (Santiago & Chinen, 2008); in the Philippines, it was a bio-intensive gardening project that provided children free snacks (SEAMEO, 1995); and in Zambia, it was school lunches (Chatterji et al., 2010). To its school lunches, Zambia also added clinic services. In Peru, the breakfast program was the only project intervention; in the other two countries the health intervention was combined with other types of services.

Financial interventions. The five financial services in these eight interventions mirror those provided in the rigorously evaluated programs:

- Conditional supports were offered in Bangladesh's Food for Education program in the form of free rice and wheat when children attended school at least 85 percent of the time (Ahmed & del Ninno, 2002; Meng & Ryan, 2007);
- Conditional cash transfers were used in Bangladesh's Female Stipend Program (Khandker et al., 2003);
- Scholarships were offered in Indonesia, conditional upon children's continued enrollment in school (Cameron, 2009); and
- Unconditional rewards of school supplies were given to students in the Philippines (SEAMEO, 1995); and school supplies and school fees were provided in Zambia (Chatterji et al., 2010).

3.3.3 Assessment of program effectiveness

Table 11 on the following page summarizes the results of these interventions by specifying the dependant variables found to be significantly affected by the program. It is interesting to note that all were claimed to be effective at increasing attendance or reducing the dropout rate, though we must be cautious in accepting that conclusion because of the limitations of designs of their evaluations.

There are at least three reasons why implementers do not use random assignment in designing the evaluations of their programs. The first is that program designers may be politicians, health professionals or educators who wish to provide a service and do not see evaluation as critical to that service. Thus, they may begin an intervention without a plan for evaluation, and any researcher coming later to the project would have to make the best of the situation through a quasi-experimental design that defines comparison groups after the fact. It, therefore, takes the chance of non-equivalence of groups. A second reason is that random assignment can be costly, as researchers must follow students who receive program services and those who do not. Finally, random assignment can be politically difficult in that some children will not receive what is believed to be a helpful intervention. Thankfully, donors are growing in their appreciation of rigorous evaluations and, so, are more willing to fund them, and the evaluation community is defining more and more sophisticated approaches, such as regression discontinuity designs, that allow for rigorous analysis of interventions that provide services to all eligible students or families.

Table 11: Outcome Variables Affected by the Services of Each Intervention That Did Not Meet SDPP Evaluation Criteria

Intervention	Effectiveness of Each Type of Service				
	Academic	**Financial**	**Health**	**Personal/ Social**	**Structural**
Bangladesh *Female Stipend Program* (Khandker et al., 2003)		**Attend school**			
Bangladesh *Food for Education Program* (Ahmed & del Ninno, 2002; Meng & Ryan, 2007)		**Attend school; Stay in school**			
Brazil (Graeff-Martins et al., 2006)	**Attend school; Stay in school**			**Attend school; Stay in school**	
India: *Shankarpalle Experiment* (Reddy & Sinha, 2010)	**Stay in school**				**Stay in school**
Indonesia (Cameron, 2009)		**Stay in school**			
Peru (Santiago & Chinen, 2008)			**Attend school; stay in school**		
Philippines *Project No Drops* (SEAMEO, 1995)	**Stay in school**	**Stay in school**	**Stay in school**	**Stay in school**	**Stay in school**
Zambia (Chatterji et al., 2010)	**Stay in school**	**Stay in school**	**Stay in school**	**Stay in school**	
Number (percent) of interventions of a type found to be effective	4/4 (100%)	6/6 (100%)	3/3 (100%)	3/3 (100%)	2/2 (100%)

4.0 Conclusions and Recommendations

Despite impressive gains over the past decade to increase all children's access to schooling, the scope of children dropping out of school is sobering. Although the magnitude of the problem differs across regions and even within countries, recent educational data underscore that a significant percentage of children who enter school do not complete even the basic educational cycle. This non-completion constitutes a significant wastage of resources for them personally as well as for the educational systems and societies in which they live. Although there is general consensus of the value of investments to prevent students from dropping out of school, there is less agreement on what those investments should be.

The reasons students drop out of school are complex. Ultimately, there is no one risk factor that accurately predicts or prevents school dropout. Indeed, research clearly demonstrates that dropping out of school appears to be the function of a combination of risk factors (e.g., gender, work obligations, low achievement, family poverty, little family contact with the school, living far from the school) across multiple domains (individual, family, school, and community). Consequently, although there may be a specific event that acts as a catalyst to a student dropping out of school (e.g., an income shock from the death of a family member), dropping out of school is more commonly a process that takes place over an extended period of time.

In our review of the literature on school dropout programs, we found 26 that met all four criteria for inclusion in the report (topic relevance, time frame relevance, sample relevance and evaluation design relevance). They demonstrate the following:

- Financial, structural, and academic supports (in that order) appear to be the most effective at addressing dropout in developing countries.
- Structural supports are more successful when they focus on the local area, that is, include teachers and parents of the students.
- Academic supports must involve more than simply the provision of materials (e.g., textbooks).
- Focus on a single action or activity helps pinpoint that action as the reason for a lowering of the dropout rate, but combinations of actions may have an equal or greater power to effect change.

Finally, our review clearly underscores the need for well designed interventions that include rigorous monitoring and evaluation procedures from the onset of program implementation that can provide research-grounded guidance on policies, programs and practices that contribute to children staying in school.

The following ***recommendations*** follow from this review of the literature as SDPP plans its remaining project activities:

1. **SDPP must design each intervention to fit the context of the area in which it will be implemented.**

Every risk factor does not hold true for every student; the risk factors at play in a particular location may be quite different from those in another location. Before any intervention is designed, it is critical for SDPP staff to understand the situation in each focal country. Within a country, there may even be different forces at work in different communities, so that the process of design must include discussions about the appropriate target groups, locations, and then an analysis of the characteristics of dropouts in those groups and locations.

2. **SDPP needs to consider the implications of large financial need in each focus country in designing interventions: families may be able to contribute in-kind services but not money, and children may not be able to participate in any activity after school hours.**

The two characteristics of dropouts most frequently cited in the literature regarding developing countries are (a) the poverty level of the family and (b) the need for children to help out at home or earn money. However, it is not within the purview of SDPP to offer a program of financial incentives. Rather, it must recognize that (a) the families to be served can only contribute in kind to a school project and (b) children will still be needed at home and cannot be occupied with school activities many more hours of the day than classes require.

3. **SDPP projects may successfully focus on girls, children with disabilities or health issues, and children living far from the school, as these groups are more likely to drop out of school than others.**

Among the characteristics describing dropouts are a series of factors that suggest criteria for the location of an intervention program or a specific group of target children. These children include girls, children with a disability or health issue, and children living at some distance from school. Should any or all of these factors prove particularly important in one of SDPP's focal countries, interventions could be structured around the specific characteristic.

4. **SDPP interventions can focus on a single activity or involve multiple activities.**

This review of dropout intervention programs covered a number of interventions that focused on the provision of a single service or product, like tutoring, the supply of school uniforms, de-worming, or providing teachers and school management committees with forms to evaluate the school. Eighteen of the 20 international programs were of this sort. One good reason may be that an evaluation of a single activity can clearly show that the activity has made a difference. However, we also saw that the combination program in Burkina Faso, which offered services of each of the five types, had tremendous positive results, so SDPP should consider this option as well.

5. **SDPP should seriously consider structural, academic, and personal/social interventions, as evaluations showed these to be more effective than health interventions in terms of educational outcomes.**

   In thinking about specific activities, SDPP staff should build on the following findings:

   - The three structural interventions that had a significant impact on student attendance and dropout all included *work with parents and communities*; the one that did not show effects had no parent component.
   - A very limited number of academic interventions have been tried, and among these the more effective involved both the *provision of materials and hands-on assistance* or mentoring in the use of the materials. Simply giving a textbook, providing a computer, or engaging in tutoring that repeats the rote instruction of a teacher is insufficient.
   - Personal/social interventions are rare in the developing world but have proved successful in the U.S. It would extend the possibilities that donors consider to show that interventions such as clubs or counseling can make a difference.

6. **Every intervention needs an evaluation that is methodologically strong and implemented along with the project.**

One of the lessons learned from the review of program evaluations is that those evaluations conceived after the program had been implemented rarely met the criteria for inclusion among the rigorously evaluated interventions. Random assignment cannot occur after an intervention has started; quasi-experimental designs developed after a program has begun often discover non-equivalence between treatment and comparison groups and take the risk of significant attrition. By designing and implementing the evaluation prior to the start of an intervention, SDPP has the greatest chance of knowing for certain that its program is effective.

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Appendix A
Education Statistics for SDPP Countries

Table A-1: Education Statistics for SDPP Countries

Country	Data[15]	Source	Year				
			2005	2006	2007	2008	2009
Cambodia	Net enrollment rate. Primary. Female	UIS		89	88	87	
	Net enrollment rate. Primary. Male	UIS		91	92	90	
	Net enrollment rate. Primary. Total	UIS		90	90	89	
	Net enrollment rate. Secondary. Female	UIS	22	28	32		
	Net enrollment rate. Secondary. Male	UIS	26	33	36		
	Net enrollment rate. Secondary. Total	UIS	34	31	34		
	Gross enrollment ratio. Primary. Female	UIS	120	118	115	112	
	Gross enrollment ratio. Primary. Male	UIS	130	126	124	120	
	Gross enrollment ratio. Primary. Total	UIS	125	122	120	116	
	Gross enrollment ratio. Secondary. Female	UIS		33	36		
	Gross enrollment ratio. Secondary. Male	UIS		42	44		
	Gross enrollment ratio. Secondary. Total	UIS		38	40		
	Survival rate to last grade of primary. Female	UIS	57	56	57		
	Survival rate to last grade of primary. Male	UIS	54	53	52		
	Survival rate to last grade of primary. Total	UIS	55	54	54		
	Dropout rate. Primary level. Female	EdStats	43	44	43		
	Dropout rate. Primary level. Male	EdStats	46	47	48		
India	Net enrollment rate. Primary. Female	UIS	87	87	88		
	Net enrollment rate. Primary. Male	UIS	91	91	91		
	Net enrollment rate. Primary. Total	UIS	89	89	90	91	
	Gross enrollment ratio. Primary Female	UIS	110	110	111		
	Gross enrollment ratio. Primary Male	UIS	114	115	115		
	Gross enrollment ratio. Primary. Total	UIS	112	112	113	117	
	Gross enrollment ratio. Secondary. Female	UIS	49	50	52	56	
	Gross enrollment ratio. Secondary. Male	UIS	59	60	61	64	
	Gross enrollment ratio. Secondary. Total	UIS	54	55	57	60	
	Survival rate to last grade of primary. Female	UIS	65				

[15] Net enrollment rate (NER): Enrollment of the official age group for a given level of education expressed as a percentage of the corresponding population.
Gross enrollment rate (GER): Total enrollment in a specific level of education, regardless of age, expressed as a percentage of the eligible official school-age population corresponding to the same level of education in a given school year.
Survival rate: Percentage of cohort of pupils (or students) enrolled in the first grade of a given level or cycle of education in a given school year who are expected to reach successive grades.
Dropout rate: Percentage of a cohort of pupils enrolled in the first grade of a primary education who are not expected to reach the last grade of primary education; calculated as 100% minus the survival rate to the last grade of primary school

Country	Data[15]	Source	Year				
			2005	2006	2007	2008	2009
	Survival rate to last grade of primary. Male	UIS	66				
	Survival rate to last grade of primary. Total	UIS	66				
	Dropout rate. Primary level. Female	EdStats	35				
	Dropout rate. Primary level. Male	EdStats	34				
Tajikistan	Net enrollment rate. Primary. Female	UIS	96	95	95	95	
	Net enrollment rate. Primary. Male	UIS	99	99	99	99	
	Net enrollment rate. Primary. Total	UIS	97	97	97	97	
	Net enrollment rate. Secondary. Female	UIS	73	74	75	77	
	Net enrollment rate. Secondary. Male	UIS	87	87	88	88	
	Net enrollment rate. Secondary. Total	UIS	80	81	81	83	
	Gross enrollment ratio. Primary Female	UIS	98	98	98	100	
	Gross enrollment ratio. Primary Male	UIS	102	103	102	104	
	Gross enrollment ratio. Primary. Total	UIS	100	100	100	102	
	Gross enrollment ratio. Secondary. Female	UIS	75	75	76	78	
	Gross enrollment ratio. Secondary. Male	UIS	90	90	91	90	
	Gross enrollment ratio. Secondary. Total	UIS	82	83	84	84	
	Survival rate to last grade of primary. Female	UIS	97				
	Survival rate to last grade of primary. Male	UIS	100				
	Survival rate to last grade of primary. Total	UIS	99	99	99		
	Dropout rate. Primary (1-4) level. Total	EMIS				0	
	Dropout rate. Basic (5-9) level. Total	EMIS				3	
	Dropout rate. Complete Secondary (10-11) level. Total	EMIS				9	
Timor Leste[16]	Net enrollment rate. Primary. Female	UIS	67		63	74	81
	Net enrollment rate. Primary. Male	UIS	70		66	77	83
	Net enrollment rate. Primary. Total	UIS	69		65	76	82
	Net enrollment rate. Secondary. Female	UIS			33		
	Net enrollment rate. Secondary. Male	UIS			30		
	Net enrollment rate. Secondary. Total	UIS			31		
	Gross enrollment ratio. Primary. Female	UIS	96		90	103	109
	Gross enrollment ratio. Primary. Male	UIS	104		96	110	116
	Gross enrollment ratio. Primary. Total	UIS	100		93	107	
	Gross enrollment ratio. Secondary. Female	UIS	55				

[16] Data from 2005-2007 may not be completely reliable—schools suffered major disruptions during 2006-2007 due to civil unrest, resulting in anomalous patterns and irregular data collection. Although the system has greatly improved, data from years previously to 2008 should be cautiously considered.

Country	Data[15]	Source	Year				
			2005	2006	2007	2008	2009
	Gross enrollment ratio. Secondary. Male	UIS	55				
	Gross enrollment ratio. Secondary. Total	UIS	55				51
	Survival rate to last grade of primary. Female	UIS				78	
	Survival rate to last grade of primary. Male	UIS				68	
	Survival rate to last grade of primary. Total	UIS				72	
	Dropout rate. Primary level. Female	EdStats				32	
	Dropout rate. Primary level. Male	EdStats				22	

Appendix B
Risk Factors for Dropping Out

Table B-1: Risk Factors for Dropping Out in the U.S. and OECD Countries

Risk Factors for Dropping Out: U.S. and OECD Countries	Abbott et al. (2000)	Amonov et al. (2007)	Balfanz et al. (2008)	Bridgeland et al. (2006)	Christenson & Thurlow (2004)	Dynarski & Gleason (2002)	Dynarski et al. (2008)	Garnier et al., 1997	Hammond et al. (2007)	Heppen & Therriault (2008)	Kennelly & Monrad (2007)	Lyche (2010)	National High School Center (2007)	Nauer et al. (2008)	Rumberger & Lim (2008)	Stanley & Plucker (2008)
Individual Domain																
Individual Background Characteristics																
- Higher age at school entry																
- Male												x[17]			x	x
- Presence of disability/frequent illness			x						x			x	x	x		
Early Adult Responsibility																
- Economic/opportunity cost/employment		x	x	x					x						x	
- Marriage/Parenthood			x						x			x		x	x	
Social Attitudes, Values & Behavior																
- High-risk peer group/social behavior	x							x	x						x	
- Admiration for those who left																
School Performance																
- Low achievement	x		x	x	x		x	x	x	x	x	x		x	x	x
- Retention/overage for grade			x	x			x		x		x	x			x	x
School Engagement																
- Poor attendance			x	x	x		x		x	x	x	x		x	x	x
- Low educational expectations									x			x			x	

[17] An "x" in a cell means that this risk factor was found to be significantly related to student dropout.

Risk Factors for Dropping Out: U.S. and OECD Countries	Abbott et al. (2000)	Amonov et al. (2007)	Balfanz et al. (2008)	Bridgeland et al. (2006)	Christenson & Thurlow (2004)	Dynarski & Gleason (2002)	Dynarski et al. (2008)	Garnier et al., 1997	Hammond et al. (2007)	Heppen & Therriault (2008)	Kennelly & Monrad (2007)	Lyche (2010)	National High School Center (2007)	Nauer et al. (2008)	Rumberger & Lim (2008)	Stanley & Plucker (2008)
- Low commitment to school/lack of interest			x	x	x		x	x	x		x	x				x
School Behavior																
- Misbehavior/delinquency	x		x		x		x		x			x			x	x
Family Domain																
Family Background Characteristics																
- Low socioeconomic status	x					x		x	x			x		x	x	x
- Ethnic/caste/language minority						x						x			x	x
- Low education level of parents									x			x		x	x	
- Not living with both natural parents			x			x			x			x		x	x	
- Parent unemployed												x			x	
- Large number of siblings, esp. under 5									x			x		x		
- Family disruption (e.g., divorce, death)			x					x	x						x	
- High family mobility					x		x		x			x		x		x
Family Engagement/Commitment to Educ.																
- Sibling has dropped out						x			x			x				
- Low contact with school			x	x	x				x			x			x	
- Little importance placed on schooling					x				x			x			x	
School Domain																
Structure																

Risk Factors for Dropping Out: U.S. and OECD Countries	Abbott et al. (2000)	Amonov et al. (2007)	Balfanz et al. (2008)	Bridgeland et al. (2006)	Christenson & Thurlow (2004)	Dynarski & Gleason (2002)	Dynarski et al. (2008)	Garnier et al., 1997	Hammond et al. (2007)	Heppen & Therriault (2008)	Kennelly & Monrad (2007)	Lyche (2010)	National High School Center (2007)	Nauer et al. (2008)	Rumberger & Lim (2008)	Stanley & Plucker (2008)
- Large enrollment					x		x									x
- Higher concentration of low-income														x	x	x
- Distance too far/too few schools														x		
- Lack of facilities & materials																
- Lack of post-primary schools																
Functioning																
- Lower school "quality"												x				
- Unsafe (e.g., gangs, corporal punishment)			x		x		x									
- Low quality of teacher/high teacher absence																
- Lack of relationship with adult in school			x		x		x									x
- Language of instruction not mother tongue														x		
- Lack of relevance of curriculum			x	x								x				x
- Lack of rigor in teaching			x	x			x					x			x	x
Community Domain																
Urban																
Rural																
Large numbers of poor, minority, foreign born, single parents, parents with low educ.												x		x	x	
Presence of conflict, emergency, politically fragile																

Risk Factors for Dropping Out: U.S. and OECD Countries	Abbott et al. (2000)	Amonov et al. (2007)	Balfanz et al. (2008)	Bridgeland et al. (2006)	Christenson & Thurlow (2004)	Dynarski & Gleason (2002)	Dynarski et al. (2008)	Garnier et al., 1997	Hammond et al. (2007)	Heppen & Therriault (2008)	Kennelly & Monrad (2007)	Lyche (2010)	National High School Center (2007)	Nauer et al. (2008)	Rumberger & Lim (2008)	Stanley & Plucker (2008)
Cultural notions/rites of passage that preclude school																

Table B-2: Risk Factors for Dropping Out in Developing Countries

Risk Factors for Dropping Out: Developing Countries	Ampiah et al. (2009)	Baschieri & Falkingham (2007)	Bredenberg & Sovann (2003)	CARE (2010)	CREATE (2010)	Crighton (2005)	Das (2010)	Filmer (2009)	Govinda & Bandyopadhyay (2008)	Hanushek et al (2006)	Hunt (2008)	Kampuchean Action (2003)	Kampuchean Action (2008)	Kasente (2003)	Laughan (2007)	Lloyd & Mensch (2006)
Individual Domain																
Individual Background Characteristics																
- Higher age at enrollment		x									x				x	x
- Female		x	x					x	x		x		x			
- Presence of disability/frequent illness	x			x				x			x		x	x	x	
Early Adult Responsibility																
- Economic/opportunity cost/employment	x	x	x	x	x	x	x		x		x	x	x	x	x	
- Marriage/Parenthood	x			x							x		x	x	x	
Social Attitudes, Values & Behavior																
- High-risk peer group/social behavior																
- Admiration for those who left											x		x			
School Performance																
- Low achievement	x					x	x		x		x		x	x		
- Retention/overage for grade	x				x	x	x		x		x		x	x		x
School Engagement																
- Poor attendance	x				x	x	x				x		x			
- Low educational expectations																
- Low commitment to school/lack of interest				x	x	x	x		x		x		x	x		

Risk Factors for Dropping Out: Developing Countries	Ampiah et al. (2009)	Baschieri & Falkingham (2007)	Bredenberg & Sovann (2003)	CARE (2010)	CREATE (2010)	Crighton (2005)	Das (2010)	Filmer (2009)	Govinda & Bandyopadhyay (2008)	Hanushek et al (2006)	Hunt (2008)	Kampuchean Action (2003)	Kampuchean Action (2008)	Kasente (2003)	Laughan (2007)	Lloyd & Mensch (2006)
School Behavior																
- Misbehavior/delinquency						x	x									
Family Domain																
Family Background Characteristics																
- Low socioeconomic status	x		x			x	x	x	x		x	x	x	x	x	
- Ethnic/caste or religious minority							x	x	x		x		x			
- Low education level of parents		x	x	x			x		x		x				x	
- Not living with both natural parents	x					x	x	x			x				x	
- Parent unemployed					x						x					
- Large number of siblings, esp. under 5		x									x		x		x	
- Family disruption (e.g., divorce, death)					x		x				x					
- High family mobility/migration					x						x		x			
Family Engagement/Commitment to Educ.																
- Sibling has dropped out																
- Low contact with school							x									
- Little importance placed on schooling	x			x			x		x		x					
School Domain																
Structure																
- Large enrollment																
- Higher concentration of low-income																

Risk Factors for Dropping Out: Developing Countries	Ampiah et al. (2009)	Baschieri & Falkingham (2007)	Bredenberg & Sovann (2003)	CARE (2010)	CREATE (2010)	Crighton (2005)	Das (2010)	Filmer (2009)	Govinda & Bandyopadhyay (2008)	Hanushek et al (2006)	Hunt (2008)	Kampuchean Action (2003)	Kampuchean Action (2008)	Kasente (2003)	Laughan (2007)	Lloyd & Mensch (2006)
- Distance too far/too few schools			x	x		x					x	x		x	x	
- Lack of facilities & materials											x		x		x	
- Lack of post-primary schools														x		
Functioning																
- Lower school "quality"		x							x	x	x			x	x	
- Unsafe (e.g., gangs, corporal punishment)	x				x						x		x			
- Low quality of teacher/high teacher absence											x		x	x		
- Lack of relationship with adult in school																
- Language of instruction not mother tongue											x					
- Lack of relevance of curriculum						x										
- Lack of rigor in teaching																
Community Domain																
Urban/slum areas											x					
Rural							x	x			x					
Large numbers of poor, minority, foreign born, single parents, parents with low educ.											x					
Presence of conflict, emergency, politically fragile						x					x					
Cultural notions/rites of passage that preclude school											x				x	

Risk Factors for Dropping Out: Developing Countries (Cont.)	Lloyd et al. (2009)	Manacorda (2006)	Okumu et al. (2008)	Open Society Institute (2002)	Open Society Institute (2005)	Open Society Institute (2007)	Roberts (2006)	Sarker & Davey (2009)	UNESCO Inst. For Statistics (2005)	UN Millennium Project (2005)
Individual Domain										
Individual Background Characteristics										
- Higher age at enrollment									x	
- Female					x				x	x
- Presence of disability/frequent illness				x	x	x	x			x
Early Adult Responsibility										
- Economic/opportunity cost/employment	x			x	x	x	x	x		
- Marriage/Parenthood						x				
Social Attitudes, Values & Behavior										
- High-risk peer group/social behavior										
- Admiration for those who left						x				
School Performance										
- Low achievement		x				x				
- Retention/overage for grade									x	
School Engagement										
- Poor attendance				x	x					
- Low educational expectations										
- Low commitment to school/lack of interest					x	x				
School Behavior										
- Misbehavior/delinquency										

Risk Factors for Dropping Out: Developing Countries (Cont.)	Lloyd et al. (2009)	Manacorda (2006)	Okumu et al. (2008)	Open Society Institute (2002)	Open Society Institute (2005)	Open Society Institute (2007)	Roberts (2006)	Sarker & Davey (2009)	UNESCO Inst. For Statistics (2005)	UN Millennium Project (2005)
Family Domain										
Family Background Characteristics										
- Low socioeconomic status	x	x		x	x	x	x	x		x
- Ethnic/caste or religious minority						x		x		
- Low education level of parents	x		x		x				x	x
- Not living with both natural parents					x	x				
- Parent unemployed			x		x					
- Large number of siblings, esp. under 5	x									
- Family disruption (e.g., divorce, death)					x	x				
- High family mobility/migration					x	x		x		x
Family Engagement/Commitment to Educ.										
- Sibling has dropped out										
- Low contact with school						x				
- Little importance placed on schooling										
School Domain										
Structure										
- Large enrollment										
- Higher concentration of low-income										
- Distance too far/too few schools			x		x	x	x			

Risk Factors for Dropping Out: Developing Countries (Cont.)	Lloyd et al. (2009)	Manacorda (2006)	Okumu et al. (2008)	Open Society Institute (2002)	Open Society Institute (2005)	Open Society Institute (2007)	Roberts (2006)	Sarker & Davey (2009)	UNESCO Inst. For Statistics (2005)	UN Millennium Project (2005)
- Lack of facilities & materials	x									
- Lack of post-primary schools	x									
Functioning										
- Lower school "quality"										
- Unsafe (e.g., gangs, corporal punishment)						x	x			
- Low quality of teacher/high teacher absence										
- Lack of relationship with adult in school										
- Language of instruction not mother tongue								x		x
- Lack of relevance of curriculum				x		x				
- Lack of rigor in teaching										
Community Domain										
Urban/slum areas										
Rural	x		x	x					x	x
Large numbers of poor, minority, foreign born, single parents, parents with low educ.										
Presence of conflict, emergency, politically fragile					x					x
Cultural notions/rites of passage that preclude school										

Appendix C:
Summary of Dropout Intervention Studies That Meet All SDPP Criteria

Table C-1: Dropout Intervention Programs That Meet All SDPP Criteria

Authors	Significant Outcome(s)	Target Group	Services	Methodology	Costs	Effects
Interventions in Developed Countries (in alphabetical order by name of intervention)						
1) **Accelerated Middle Schools** (Dynarski et al., 1998)	• Stay in school • Progress in school	6th-8th graders in 3 urban areas, all 1-2 years behind grade level	**Academic:** • 2 years of curriculum in 1 school year • Tutoring **Personal/social:** • Counseling • Family outreach **Structural:** • Small class sizes	RCT: 847 students: • GA: 60% African-American; more than 70% male • NJ: 75% African-American; 25% Hispanic; 50% male • MI: 60% African-American; 60% male	• $7,000/student/ year in GA; • $13,000/year in NJ; • $11,000/year in MI (Costs in 2007 dollars)	• Positive effects on staying in school (average 18 percentile points improvement) • Positive effects on progressing in school (average 35 percentile points improvement)
2) **Achievement for Latinos through Academic Success (ALAS) (**Larson & Rumberger, 2005)	• Stay in school • Progress in school	7th-8th graders in Los Angeles, CA (urban) at risk of dropping out because of low academic performance or behavior problems	**Personal/social:** • Special classes on problem-solving skills • Case management • Close monitoring of attendance • Family outreach	RCT: 94 students; 96% Latino; 65% male	$1,185/student/ year (2005)	• Positive effects on staying in school (average 42 percentile points improvement) • Positive effects on progressing in school (average 19 percentile points improvement)
3) **Career Academies** (Kemple & Snipes, 2000; Kemple, 2004)	• Stay in school • Progress in school	High school students at risk of dropping out in 8 urban areas in 6 states	**Academic:** • Coursework organized around career themes **Personal/social:** • Internships with local employers • Mentoring from local employers **Structural:**	RCT: 474 students; 79% 15 years old or younger; 57% female; 52% Hispanic, 38% African-American	$600/student/year more than a district's average per pupil expenditure (2004)	• Positive effects on staying in school (average 13 percentile points improvement) • Positive effects on progressing in school (average 13 percentile points improvement)

Authors	Significant Outcome(s)	Target Group	Services	Methodology	Costs	Effects
			• School within a school			
4) **Check & Connect** (Sinclair et al., 1998, 2005)	• Stay in school • Progress in school	6th-12th graders in Minneapolis (urban) with learning, emotional, and behavioral disabilities	**Academic:** • Tutoring **Personal/social:** • Case management • Close monitoring of attendance • Mentoring • Family outreach	RCT: 238 students: 62% African-American; 78% male	$1,400/student/ year (2001-2002)	• Positive effects on staying in school (average 25 percentile points improvement) • Positive effects on progressing in school (average 30 percentile points improvement)
5) **Talent Development High Schools** (Kemple et al., 2005)	• Progress in school	High school students in 11 urban high schools in Philadelphia, PA (urban)	**Academic:** • Curriculum emphasized college preparation, reading and math instruction • After-hours school for students with attendance or discipline problems • **Personal/social:** • Support services in after-hours school **Structural:** • School restructured into small learning communities	QED: Comparative interrupted time series, Ns not reported	$350/student/year more than a district's average per pupil expenditure (2005)	• Positive effects on progressing in school (average 7 percentile points improvement)
6) **Twelve Together** (Dynarski et al., 1998)	• Stay in school	6th–9th graders in Chula Vista, CA (urban)	**Academic:** • Homework assistance **Personal/social:** • Weekly after-school discussion groups with trained adult	RCT: 219 students in 9 middle schools; 50% Hispanic, 25% Asian, 10% African-American, 15% white; no breakdown by gender	$307/student/ month for 9 months or $2,763/ year (2008)	• Positive effects on staying in school (average 13 percentile points improvement)

Authors	Significant Outcome(s)	Target Group	Services	Methodology	Costs	Effects
			• Trips to college campuses • Annual weekend retreat			
Interventions in Developing Countries (in alphabetical order by country)						
7) Brazil, **Bolsa Familia** (Glewwe & Kassouf, 2010)	• Stay in school • Progress in school	Poor families with children aged 6-15 (1st-8th graders) in the country (rural and urban)	**Financial:** Conditional cash transfers to families based on school enrollment and attendance at least 85% of the time	QED: 1998-2005 school census data, selecting those schools with data for all years	$7.50/child/month up to a maximum of 3 children (2005)	• Enrollment increased by 5.5% in grades 1-4 and 6.5% in grades 5-8 • Dropout rates decreased by .5 percentage points in grades 1-4 and .4 percentage points for grades 5-8 • Grade promotion rates increased by .9 percentage points for grades 1-4 and by .3 percentage points for grades 5-8
8) Burkina Faso, **BRIGHT** (Levy et al., 2009)	• Attend school	Primary school children (especially girls) in 132 rural villages in the 10 provinces with the lowest rates of girls' primary school completion	**Academic:** • Open a school in a village where none had existed • Provide adult literacy training **Financial:** • With 90% attendance, girls receive 8 kg dry cereal to take home • Provide text books and school supplies to all children	QED: Regression discontinuity: Children in the 132 BRIGHT villages compared with children in 161 similar villages that had applied to participate in BRIGHT but were not chosen. 8,790 households surveyed, with 21,730 children taking math and	No information on per school cost	Children in BRIGHT schools showed: • An improvement of about 20 percentage points in enrollment, based on household survey data, and 16 percentage points based on school data • An improvement in attendance of about 16 percentage points • Test scores in math and French about .4

Authors	Significant Outcome(s)	Target Group	Services	Methodology	Costs	Effects
			Health: • Provide daily lunch **Personal/social:** • Mentor girls **Structural:** • Construct 3-classroom school, housing for 3 teachers, and separate latrines for boys and girls, water pump • Build school canteen • Mobilize communities Train local partners	French tests. Data on attendance and enrollment collected in schools.		standard deviations higher(if a child started at the 50th percentile, he/she would improve to the 80th in a BRIGHT school) Girls' enrollment was impacted more positively than boys (by 5%), but test scores showed no gender difference.
9) Cambodia (Filmer & Schady, 2009)	• Stay in school	Poor families with children in lower secondary (7th-9th grades)	**Financial:** Scholarships for poor students at risk of dropping out	QED: Regression discontinuity, including 3,225 scholarship applicants and their families	• Schools with enrollments over 200: $60 to 25 students with lowest dropout risk, $45 to 25 with next lowest risk • Schools with enrollment under 200: $60 to 15 students with lowest risk; $45 to next 15	Children with scholarships: • Were 20 percentage points more likely to enroll in secondary school • Were 20 to 25 percentage points more likely to attend • Did not differ from the comparison group on test scores in mathematics and vocabulary
10) Colombia, **PACES** (Angrist et al., 2002)	• Progress in school	6th -11th graders in Bogota and Jamundi	**Financial:** Vouchers for private schooling; renewable only if student passed to next	QED: 1618 applicants for the voucher lottery, half winners & half	$190; about half the cost of private schooling (1998)	Three years later, those receiving vouchers were: • No different in rate of

Authors	Significant Outcome(s)	Target Group	Services	Methodology	Costs	Effects
		(urban) neighborhoods in the 2 lowest socioeconomic strata (of 6)	grade	losers; 807 male; average age 12.6		staying in school • 5 to 6 percentage points less likely to repeat grades and 10 percentage points more likely to have completed eighth grade (they repeated fewer grades) • Scored marginally higher on achievement tests • Less likely to be married • Working 1.2 fewer hours/week • 15 percentage points more likely to attend a private school
11) Colombia (Barrera-Osorio et al., 2008)	• Attend school • Stay in school • Complete school	6th-11th graders in Bogota (urban)	**Financial:** Conditional cash transfers of 3 types: 1) Based on at least 80% attendance (basic treatment) 2) 2/3 based on attendance; 1/3 based on enrollment in next grade (savings treatment) 3) 2/3 based on attendance; 1/3 based on enrollment in tertiary program (tertiary treatment)	RCT: 13,433 students randomly assigned to treatment groups or control	$15/student/ month (2005)	Those in the treatment groups were: • More likely to attend school by 2.9 to 5.0 percentage points, depending on the treatment option • More likely to re-enroll by about 4 percentage points (savings and tertiary treatments only) • More likely to graduate by 4.0 percentage points • More likely to

Authors	Significant Outcome(s)	Target Group	Services	Methodology	Costs	Effects
						matriculate to a tertiary institution by9.4 percentage points (savings treatment) and 48.9 percentage points (tertiary treatment)
12) Honduras, **PRAF** (Glewwe & Olinto, 2004)	• Attend school • Stay in school • Progress in school	Primary school children aged 6-13 in 70 rural municipalities in Honduras	**Financial:** Conditional cash transfers to families for school attendance or payments to the PTA to improve the quality of education pro rated by school enrollment	RCT: Municipalities randomly assigned to 4 groups: 1) Demand side intervention only (20) 2) Demand and supply side interventions (20) 3) Supply side intervention only (10) 4) Control group without intervention (20) Sample included 5,748 households and 7,678 children	Cash transfer of $5/student/month; $1,600 to $23,000 per school PTA (2000)	• Cash transfers increased enrollment rates by 1-2 percentage points, increased school attendance by .8 days per month, reduced dropout rates by 2-3 percentage points, and increased annual promotion rates by 2-4 percentage points • Payments to the PTA had no effect
13) India (Banerjee et al., 2007)	• None	3rd-4th graders in low-income neighborhoods in urban Vadodara and Mumbai (urban)	**Academic:** • Remedial tutoring by a young local woman in basic literacy and numeracy for 2 hours/day (half of the 4-hour school day) or • Use of a computer-assisted learning program in math 2	RCT: • 14,972 students in 165 schools participated in the tutoring study in 2001 (2002 did not meet methodology criteria for inclusion) • 5,945 students in 111 schools participated in computer-assisted	• Tutors earned $10-$15/month; • Computer programs cost $15.18/student/ year (2004)	• Neither program had an effect on attendance or dropout rate • Test scores increased for students receiving remedial tutoring, especially those farthest behind • Math test scores increased for students using the computer

Authors	Significant Outcome(s)	Target Group	Services	Methodology	Costs	Effects
			hours/week	learning in 2002 and the same number in 2003		• The effects on test scores decrease over time • Hiring tutors was more cost effective
14) India (Duflo et al., 2010)	• Complete school	Para-teachers in 113 single-teacher non-formal primary schools in rural India	**Structural:** To increase teacher attendance, cameras were given to half of the schools to take a picture of the teacher and students at the beginning and end of each day; teachers were paid on the basis of attendance	RCT: 57 schools given cameras and instructions; 56 schools served as comparisons	About $23/ teacher/month (2003)	• Teacher absenteeism fell by 21 percentage points • A child in a treatment school had 9 percentage points (or 30%) more days of instruction • Children's attendance was not significantly different • Children's test scores in language and math rose by .17 standard deviations • The dropout rate was slightly lower for the treatment schools but statistically insignificant • 26% of students in treatment schools graduated to government schools, 10% more than in comparison schools
15) Jamaica, **PATH** (Levy & Ohls, 2007)	• Attend school	Poor children from birth through age 17, all over the country	**Financial:** • Conditional cash transfers to increase health care visits (ages 0-5) and school	QED: Regression discontinuity: A sample of 2,500 households just below the eligibility	$6.50/child/month (2005)	PATH has: • Increased school attendance by 0.5 days per month • Increased health care

Authors	Significant Outcome(s)	Target Group	Services	Methodology	Costs	Effects
			attendance (ages 6-17) • Waiver of school tuition and cost of health center visit	line for PATH compared with 2,500 households just above the line and deemed not eligible		visits for children 0-6 by 38%
16) Kenya (Duflo et al., 2006)	• Stay in school	Primary school students in 2 districts of Western Kenya: Bungoma and Butere-Mumias	**Financial:** • Paying for school uniforms for Grade 6 **Health:** • Training teachers on the government's HIV/AIDS curriculum • Encouraging students to discuss condoms and write essays on protecting themselves against HIV/AIDS	RCT: 328 primary schools: • 82 Control schools • 41 Teacher training only • 42 Teacher training and condom debate • 83 School uniform only • 40 Teacher training and school uniform • 40 All 3 interventions	• Teacher training: $550/school • Condom debate: no cost • School uniform: $6/student (2003)	• Providing a school uniform reduced the dropout rate for boys and girls by 15% • The program had little other impact on students' knowledge, attitudes, and behavior, or on the incidence of teen childbearing
17) Kenya (Glewwe et al., 2003)	• Stay in school	Students from grades 4 to 8	**Financial:** Teachers received bonuses based on the performance of the schools as a whole on annual district exams	RCT: 50 treatment schools and 50 comparison schools	Bonuses ranged in value from 21-43% of typical monthly salaries	• No difference in dropout or retention rates between treatment and comparison schools • Students in treatment schools had higher average test scores
18) Kenya (Glewwe et al., 2007)	• Attend school • Stay in school • Progress in school	Students from grades 3 to 8	**Academic:** A 60% textbook per pupil ratio was provided in English and science and a 50% ratio was provided in math	RCT: Comparison was done between four groups of 25 schools that received books in sequential years, comparing schools that had books versus those	$2.65 per student	• No evidence that textbook provision increased attendance, reduced grade repetition, or reduced the dropout rate • No evidence that textbook provision

Authors	Significant Outcome(s)	Target Group	Services	Methodology	Costs	Effects
				that did not		increased average test scores • Provision of textbooks benefitted academically strong students but not weaker ones; more 8th graders in treatment schools went on to secondary schools
19) Kenya (Friedman et al., 2011)	• Stay in school • Progress in school	Grade 6 girls	**Financial:** Provide scholarships to girls whose performance on the government's standardized end of year exam placed them in the top 15%	RCT: 69 schools (34 treatment schools (1640 students) and 35 controls (1652 students)	• $6.40 per year to the school to cover fees • $12.80 per year to parents for school expenses • Total $38 over two years	4-5 years after receiving scholarships, girls were: • 7.8 percentage points more likely to still be enrolled in school • 8.6 percentage points more likely to have attended at least some secondary school.
20) Kenya (Miguel & Kremer, 2004)	• Attend school	6- to 18-year-olds in rural primary schools in Busia (western Kenya)	**Health:** Administration of deworming medication once or twice a year, depending on local frequency of helminth infection	RCT: 75 schools (about 30,000 children) divided into 3 groups of 25 schools: 1) Free deworming in 1998 and 1999 2) Free deworming in 1999 3) Free deworming in 2001 Study centers on 1998 & 1999. Those schools not receiving deworming serve as "controls."	$3.50 per child (1999)	• Infection rates significantly reduced • Absenteeism 5.1 percentage points lower in treated group • No difference in academic test scores

Authors	Significant Outcome(s)	Target Group	Services	Methodology	Costs	Effects
21) Madagascar (Nguyen & Lassibille, 2008)	• Attend school	Primary school students	**Structural:** Operational tools and training that included forms for district supervisors only, for district and subdistrict staff, or district and subdistrict staff plus teachers and parents	RCT: 15 treatment and 15 control districts; random selection of subdistricts and schools	• No information provided	Where teachers and parents were also trained: • Students attendance increased by 4.3 percentage points • Student test scores increased by 0.1 standard deviation
22) Malawi (Baird et al., 2010)	• Stay in school	13- to 22-year-old girls in Zomba (urban and rural), eligible to enter 7th grade	**Financial:** Cash transfers to parents, girls, and schools. Girls could receive cash conditional on attendance, unconditionally, or they could receive no cash.	RCT: 176 "Enumeration Areas"; 3,805 girls were randomly assigned	• Payment to households: $4-$10/month • Payment to girl: $0-$5/month • Payment to school: fee amount (2008)	Those girls in school at baseline who received cash transfers had: • A lower dropout rate (5% vs. 11%) • No difference in attendance between conditional and unconditional transfers • No difference in completing school • Higher literacy in English in Standards 5 & 6
23) Mexico, **PROGRESA** (Schultz, 2000)	• Stay in school	3rd-9th graders in poor rural communities	**Financial:** Conditional cash transfers if child attended school at least 85% of the time	RCT: 495 communities in the 7 poorest states, 314 in the program; 181 controls	Varied by grade and gender from 3rd grade ($7.74/2 months for boys and girls) to 9th grade ($24.86/2 months for boys and $28.18/2 months for girls) (1998)	• Enrollment rates increased at both the primary and secondary levels • For 7th graders, enrollment rate increased by 11.1 percentage points, from the pre-program rate of 58% to 69%: this is a major point of dropout
24) Nepal (Oster	• Attend	7th and 8th	Health: Distribution	RCT: 198 adolescent	Payment to	• No significant

Authors	Significant Outcome(s)	Target Group	Services	Methodology	Costs	Effects
& Thornton, 2009	school	graders in and around Bharatpur City in Chitwan district	of modern sanitary products	girls; half randomly assigned to the treatment group	mothers/guardian: ($1.45)	difference in school attendance • No difference in test scores, self-reported measures of self-esteem or gynecological health
25) Pakistan (Chaudhury & Parajuli, 2006)	• Attend school	6th-8th graders in districts of Punjab province with literacy rates of 40% or below	**Financial:** Conditional cash transfers to girls in public schools who maintained at least an 80% attendance rate	QED: Regression discontinuity: • 1,779 girls schools in districts receiving stipends • 3,156 girls schools in districts not receiving stipends/control 1 • 2,247 boys schools in districts receiving stipends/ control 2 • 3,265 boys schools in districts not receiving stipends/control 3	About $3/student/month (2005)	• Net growth in female enrollments in grades 6-8 in stipend districts of 6 students per school (9%) • 12 percentage point increase in school attendance for 10 to 14-year-old girls receiving stipends
26) The Philippines (Tan et al., 1999)	• Stay in school	1st to 6th graders in poor communities	**Academic:** • Multilevel learning materials (MLM) and **Health:** • School feeding (SF) or **Structural:** • Parent-teacher partnerships (PTP)	RCT: 2 low-income districts in each of 5 regions; 3 schools in 1 district randomly assigned as MLM, MLM+PTP, control; 3 schools in the other district randomly assigned as SF, SF+PTP, control	No information provided	• In schools using MLM or MLM-PTP the dropout rate decreased by at least 10% • In schools using MLM-PTP, 1st grade children scored significantly higher on tests of Filipino and English

Dropout Intervention Programs in the United States

1a. Accelerated Middle Schools: Georgia

Element	Description
Study citation	Dynarski, M., Gleason, P., Rangarajan, A., & Wood, R. (1998a). *Impacts of dropout prevention programs: Final report. A research report from the School Dropout Demonstration Assistance Program evaluation*. Princeton, NJ: Mathematica Policy Research, Inc. **Georgia study.**
Research question	Does an accelerated learning program, covering two years of academic coursework in one calendar year and providing social supports, lead to students staying in school and progressing in school?
Participants	The study sample included one cohort of 160 students who entered the 7th or 8th grade in the Griffin-Spalding (Georgia) school district in the 1993/94 school year. All students had been retained in grade at least once. Participants were, on average, 14 years old when they entered the program. About 60% of students were African-American; most others were white. More than 70% were male. About three-quarters of participants had discipline problems in the previous school year.
Setting	The Georgia study was conducted in the Griffin-Spalding school district south of Atlanta, Georgia.
Intervention	Accelerated learning: During the evaluation period the Griffin-Spalding Middle School Academy served 7th and 8th graders who had been retained in grade at least once. The school has since closed. The aim of the program was to cover two years of core curriculum content in one year so that students could "leap frog" into grade 9 and rejoin their age peers if they passed all their required courses. For example, students in the academy covered both life science and earth science in one year, whereas, in other district middle schools, a full year was devoted to each of these subjects. The program accepted about 25 students a year from each of the district's three middle schools. The academy was located in a church building that also housed a similar program for behind-grade-level high school students. The middle and high school programs shared the same teachers, administrators, and other staff. Self-esteem and decision-making skills: The school used the "SUCCESS" curriculum, which focused on self-esteem and decision-making skills, and integrated it into the core curriculum classes. Non-traditional teaching methods: The school emphasized hands-on instruction and downplayed traditional lecture methods. Teachers were given greater flexibility than other district teachers to decide what specific material to cover in their classes. The academy did not assign homework and did not allow students to take books home because staff members were concerned that students would not return the materials. The middle school academy offered few electives—it did not offer art, music, or foreign language—to make additional time in core academic subjects. Students could return to their home middle schools to participate in extracurricular activities.

Element	Description
	Counseling: The school employed a part-time counselor to work with students and their families. Information from student follow-up surveys suggests that school staff members referred substantial numbers of students to support services outside school. According to student reports, 42% of intervention-group students were referred to a social service agency for counseling, health needs, or other assistance, compared with only 15% of control-group students.
Comparison	Control-group students typically remained in one of the three traditional middle schools in the Griffin-Spalding school district.
Methodology	The Georgia study used a randomized controlled trial research design: 80 students were randomly assigned to the accelerated middle school group and were offered admission to Griffin-Spalding Middle School Academy; the other 80 students were randomly assigned to the control group and generally attended one of the other three traditional middle schools in the district. Results are drawn from a follow-up survey administered two years after random assignment: 67 intervention-group students (84%) and 73 control-group students (91%) responded. Because the response rates represent differential attrition of more than 5 percentage points, this study "meets evidence standards with reservations." Researchers compared the baseline characteristics of follow-up survey respondents in the two research groups on 13 demographic, socioeconomic, and school performance measures. A statistical test of the overall difference between the research groups on the full set of 13 baseline characteristics found that a statistically significant baseline difference did exist between the research groups (at the 0.10 significance level): intervention-group students were more likely to be from two-parent families, less likely to receive public assistance, and less likely to be frequently absent from school. Researchers used regression models to adjust for these differences when estimating the effects of the program.
Primary outcomes and measurement	Staying in school: Positive effect. The Georgia study found a lower dropout rate among accelerated middle school students: 6% compared with 14% in the control group – a difference that was not statistically significant but that is substantively important (an effect size greater than 0.25). Progressing in school: Positive effect. The average number of school years completed at the 2-year follow-up was 8.6 for accelerated middle school students and 7.9 for control group students, a statistically significant difference.
Cost	A total of $7,000/student/year. (2007 dollars)
Staff training	Instructional staff members at Griffin-Spalding Middle School Academy were regular classroom teachers from the Griffin-Spalding district. According to evaluation team researchers, they did not receive additional training as part of their assignment to the academy.

1b. Accelerated Middle Schools: Michigan

Element	Description
Study citation	Dynarski, M., Gleason, P., Rangarajan, A., & Wood, R. (1998b). *Impacts of dropout prevention programs: Final report. A research report from the School Dropout Demonstration Assistance Program evaluation*. Princeton, NJ: Mathematica Policy Research, Inc. **Michigan study.**
Research question	Does an accelerated learning program, covering two years of academic coursework in one calendar year and providing social supports, lead to students staying in school and progressing in school?
Participants	The study sample included 198 students who entered the 6th grade in the Flint Community Schools district in the 1992/93 and 1993/94 school years. All students were two or more years behind grade level and were typically 13 or 14 years old when they entered the program. District staff members identified new students for the academy each spring from 5th graders who were two or more years overage for grade. From this group they selected students they considered most likely to benefit from the accelerated program. About 60% of students were African-American; most others were white. About 60% were male. About half the participants lived in households that received public assistance. More than two-thirds had had discipline problems in the previous school year.
Setting	The Michigan study was conducted in the Flint Community Schools school district in Flint, Michigan.
Intervention	Accelerated learning: During the evaluation period the Accelerated Academics Academy (AAA) served middle school students who were two or more years behind grade level. (The school continues to operate, but this description focuses on its operations during the evaluation period.) The goal of the program was to accelerate instruction so that behind-grade-level students could enter high school with their age peers. Self-contained academy: AAA was a self-contained program that occupied an entire floor of a former middle school. The other two floors were occupied by a private school. Enrollment in the school was limited to 100 students. The program offered smaller classes than other middle schools in Flint and placed a greater emphasis on thematic instruction and integrating the curriculum across core academic subjects. Non-traditional teaching methods: Teachers often used nontraditional approaches, such as cooperative learning groups, instructional technology, collaborative teaching, and peer tutoring. The curriculum was flexible and not driven by textbook content. To make the curriculum more relevant and engaging, instruction often centered on current issues and events. AAA offered five core subjects: language arts, mathematics, science, social studies, and art. In addition, the regular schedule was compressed each Wednesday to make room for a "Wonderful Wednesday" class that included a rotating set of topics chosen based on student interests, such as algebra, Spanish, quilting, and science club. Discussion groups: Each school day began with a 30-minute "family period" in which a group of 10 students met with a staff

Element	Description
	member. These sessions could include a mix of activities, such as cooperative learning, tutoring, counseling, silent reading, or group discussions. During the sessions students had the opportunity to discuss issues of concern to them, such as violence in the community, substance use, and family relationships. The school employed a full-time counselor and a full-time social worker for students. This substantial in-house student support may explain why fewer intervention-group students than control-group students reported receiving referrals to outside social service agencies, 5% compared with 18%. The school also employed two paraprofessional "student advocates" who provided in-class tutoring and other supports to students.
Comparison	Control-group students typically attended one of the four traditional middle schools in Flint.
Methodology	The Michigan study used a randomized controlled trial research design: 112 students were randomly assigned to the accelerated middle school group and offered admission to Accelerated Academics Academy; the other 86 students were randomly assigned to the control group and typically attended one of the four traditional middle schools in the district. Results summarized here are drawn from a follow-up survey administered two years after random assignment: 100 intervention-group students (89.3%) and 72 control-group students (83.7%) responded. Because these response rates represent differential attrition of more than 5 percentage points, this study "meets evidence standards with reservations." Researchers compared the baseline characteristics of follow-up survey respondents in the two research groups on 13 demographic, socioeconomic, and school performance measures. A statistical test of the overall difference between the research groups on the full set of 13 baseline characteristics found that the groups were not significantly different at the 0.10 significance level. Even so, researchers used regression models to adjust for small differences in the initial characteristics of intervention- and control-group students when estimating the effects of the program.
Primary outcomes and measurement	Staying in school: Positive effect. 2% of accelerated middle school students had dropped out of school two years after entering the program, compared with 9% of the control group students, a statistically significant difference. Progressing in school: Positive effect. The average number of school years completed at the 2-year follow-up was 7.3 for accelerated middle school students and 6.8 for control group students, also a statistically significant difference.
Cost	A total of $11,000/student/year. (2007 dollars)
Staff training	AAA instructional staff members were regular classroom teachers from the Flint Community Schools school district. No additional information was available concerning their training.

1c. Accelerated Middle Schools: New Jersey

Element	Description
Study Citation	Dynarski, M., Gleason, P., Rangarajan, A., & Wood, R. (1998c). *Impacts of dropout prevention programs: Final report. A research report from the School Dropout Demonstration Assistance Program evaluation*. Princeton, NJ: Mathematica Policy Research, Inc. **New Jersey study.**
Research question	Does an accelerated learning program, covering two years of academic coursework in one calendar year and providing social supports, lead to students staying in school and progressing in school?
Participants	The study sample included 620 students who entered the 6th or 7th grade in the Newark public schools in the 1992/93 and 1993/94 school years and who had been retained in grade at least once. Students in the program were typically 13 years old. Three-quarters were African-American; most others were Hispanic. About half were male. About half lived in households that received public assistance, and about half had discipline problems in the previous school year.
Setting	The New Jersey study was conducted in the Newark Public Schools school district in urban Newark, New Jersey.
Intervention	Accelerated learning: During the study period Project Accelerated Curriculum Classes Emphasizing Learning (ACCEL) served 6th and 7th graders who were retained in grade at least once. (The program is no longer in operation.) The aim of the program was to allow behind-grade-level middle school students to accelerate their studies and "catch up" with their age peers. Sixth graders typically stayed in the program for two years and covered three years of curriculum material. Seventh graders were in the program for one year and covered the 7th and 8th grade curriculum. Project ACCEL operated in five district schools in Newark, some that were organized as K–8 elementary schools and others that were organized as grades 5–8 middle schools. School-within-a-school: Project ACCEL used a school-within-a-school approach and operated out of a cluster of classrooms within these schools. Each of the five programs served about 50 students, taught by a team of four teachers who each covered one of four subjects: English, math, basic skills, and science/social studies. (In contrast, in other Newark classrooms for middle-grade students at that time teachers typically taught all subjects and worked with only one group of students throughout the day.) Project ACCEL instructional staff used team teaching strategies and collaborated to link the curriculum thematically across subjects. Classes were small and generally included 12 or 13 students. Discipline emphasis: The program had a strong emphasis on discipline and attendance monitoring. Students who missed more than nine days of school were subject to termination from the program. Teachers assigned more homework than was typical in other Newark schools to facilitate the coverage of an accelerated curriculum. Counseling: One full-time guidance counselor was available to the program and worked closely with ACCEL students and teachers. Consistent with the program's emphasis on counseling and case management, on follow-up surveys more

Element	Description
	intervention-group students than control-group students reported having received counseling during the first follow-up year—74% compared with 59%. Similarly, more intervention-group students reported having received a referral to an outside social services agency during this period—27% compared with 15%. Project ACCEL staff members were supervised by the school principal. However, each Project ACCEL team had considerable autonomy in operating their program.
Comparison	Control-group students typically attended a district school and followed the standard curriculum offered by the district.
Methodology	The New Jersey study used a randomized controlled trial research design. Of the 620 students in the research sample, 392 were randomly assigned to the accelerated middle school group and offered admission to Project ACCEL; the other 228 students were randomly assigned to the control group and did not enroll in the accelerated program. Results summarized here are drawn from a follow-up survey administered two years after random assignment: 341 intervention-group students (87%) and 194 control-group students (85%) responded. Researchers compared the baseline characteristics of follow-up survey respondents in the two research groups on 13 demographic, socioeconomic, and school performance measures. A statistical test of the overall difference between the research groups on the full set of 13 baseline characteristics found that the groups were not significantly different at the 0.10 significance level. Even so, researchers used regression models to adjust for small differences in the initial characteristics of intervention- and control-group students when estimating the effects of the program.
Primary outcomes and measurement	Staying in school: No effect. Accelerated middle schools had no statistically significant or substantively important effect on dropping out. Progressing in school: Positive effect. Students in accelerated middle schools had completed 7.8 years of school at the end of the study compared with 7.5 years for the control group, a statistically significant difference.
Cost	A total of $13,000/student/year. (2007 dollars)
Staff training	All Project ACCEL staff members attended 1–2 weeks of training each August in preparation for the upcoming school year. The purpose of this training was to plan for the program and to ensure that all staff members followed the same approach. In addition, all Project ACCEL staff members met as a group five or six times during the school year to discuss program issues.

2. Achievement for Latinos through Academic Success (ALAS)

Element	Description
Study citation	Larson, K. A., & Rumberger, R. W. (1995). ALAS: Achievement for Latinos through Academic Success. In H. Thornton (Ed.), *Staying in school. A technical report of three dropout prevention projects for junior high school students with learning and emotional disabilities.* Minneapolis, MN: University of Minnesota, Institute on Community Integration. Additional analysis: Gándara, P., Larson, K. A., Mehan, H., & Rumberger, R. W. (1998). *Capturing Latino Students in the Academic Pipeline.* Berkeley, CA: Chicano/Latino Policy Project.
Research question	Does training in problem-solving and intensive case management result in Latino middle school students staying in school and progressing in school at higher rates than comparison students?
Participants	The study focuses on a group of 94 high-risk students who entered seventh grade in 1990. Students were identified as high risk if their sixth-grade teacher rated them below the classroom average on a rating scale. Almost all the high-risk students who participated in the study were Latino (96%); most were males (65%); and almost all participated in the free or reduced-price lunch program (91%). About 23% were limited English proficient (LEP), about 33% were fluent English proficient, and the rest were English only students. On average, students were 12 years 7 months old when they entered the seventh grade. Students who spoke no English were excluded because the intervention was not designed to accommodate them. The program also included a sample of students with learning disabilities or who were classified as emotionally disturbed, but the study of this sample is not included because that analysis did not meet evaluation standards. Additional analysis: This analysis focuses on a subsample of 81 out of 94 students who had entered seventh grade in 1990 and remained in the target school (treatment group) or transferred to a junior high school in the same district (control group).
Setting	The study was conducted in a large junior high school in the Los Angeles Unified School District.
Intervention	Training in problem-solving: *ALAS* students received 10 weeks of problem-solving skills instruction and two years of follow-up problem-solving prompting and counseling. Parents were trained in problem solving and participation in school. Case management; family outreach: Each student was assigned a counselor who monitored the student continuously, worked as case manager, and ensured that all components of the intervention were provided. Student period-by-period attendance was monitored, and they were required to make up missed time. Parents were contacted about student truancy or extended absence. *ALAS* provided weekly and, if needed, daily feedback reports to students and parents regarding classroom comportment and missed assignments. Using community services: *ALAS* staff helped to directly facilitate youth and parents' use of such community services as mental health services and social services.

Element	Description
	Additional analysis: The treatment group includes only students who stayed in the *ALAS* junior high during all three years (36 students).
Comparison	Forty-eight students were randomly assigned to the comparison group. They received the regular school program offered by the target school. Additional analysis: The comparison group for this study (45 students) includes students who were randomly assigned to be control students at the beginning of seventh grade and either did not transfer from the school or transferred to a school within the district.
Methodology	From the pool of 94 high-risk seventh graders, 46 students were randomly assigned to the intervention group, and the other 48 to the comparison group. Treatment students received the *ALAS* intervention during the three years of junior high school (seventh through ninth grade) or until they left the junior high school.
Primary outcomes and measurement	Staying in school: Positive effects. At the end of ninth grade, *ALAS* students were significantly more likely than control students to be enrolled in school (98% compared with 83%). Two years after the intervention had ended (the end of 11th grade), a larger fraction of *ALAS* students than control students were enrolled in school (75% compared with 67%), but the difference was not statistically significant. For the subgroup analyzed in Gándara, Larson, Mehan, and Rumberger (1998), *ALAS* students were more likely than control students to be enrolled at the end of 10th grade (86% compared with 69%), but the difference was not statistically significant. Progressing in school: For students who remained in a district school (did not drop out or transfer out of district), *ALAS* students were more likely than control students to be on track to graduate on time at the end of ninth grade (72% compared with 53%). The difference was statistically significant. Two years after the intervention had ended, and for students who remained in a district school, more *ALAS* students than control students were on track to graduate on time at the end of 11th grade (33% compared with 26%), but the difference was not statistically significant. For the subgroup analyzed in Gándara et al. (1998), a statistically larger proportion of *ALAS* students had earned enough credits to graduate from high school on time, measured at the end of ninth grade (75% compared with 44%) and at the end of tenth grade (44% compared with 22%).
Cost	$1,185/student/year. (2005 dollars)
Staff training	*ALAS* was delivered by a supervisor, counselors, and clerical staff housed full-time on the school campus. The supervisor, who was an experienced teacher, counselor, or social worker, provided on-going training to *ALAS* counselors and worked to coordinate services among the school, the family, and the community. *ALAS* staff and teachers were trained to deliver the social problem-solving skills curriculum. The supervisor may or may not have received training depending on prior experience.

3. Career Academies

Element	Description
Study Citation	Kemple, J. J., & Snipes, J. C. (2000). *Career Academies*: *Impacts on students' engagement and performance in high school*. New York: MDRC (Manpower Demonstration Research Corporation). Kemple: J. J. (2004). *Career Academies: Impacts on labor market outcomes and educational attainment*. New York: MDRC (Manpower Demonstration Research Corporation).
Research question	Does a focus on education for a specific career result in more at-risk students staying in school, progressing in school, and completing school?
Participants	This review focuses on the subgroup of 474 youth in the study sample who were considered most at risk of dropping out prior to the start of the intervention. These youth represent 27% of the total study sample of 1,764. Among these high-risk youth, 79% were 15 years old or younger, a majority were female (57%), and many were Hispanic (52%) or African-American (38%), lived in a single-parent household (50%), and received welfare or Food Stamps (32%). In the year prior to random assignment, 33% of the high-risk youth were absent for at least 15% of the school year. In the year of random assignment, 62% of the high-risk youth earned a grade point average of 2.0 or lower and 43% were overage for their grade level.
Setting	The nine schools in the evaluation were in eight urban areas in six states: Pittsburgh, PA; Baltimore, MD; Washington, DC; Miami Beach, FL; Socorro, TX; Santa Ana, CA; Watsonville, CA; and San Jose, CA.
Intervention	Career Academies in the evaluation had had three primary components: a school-within-school organization with a career theme, academic plus vocational curricula related to the career theme, and employer partnerships. • <u>School-within-school organization with a career theme:</u> The Career Academies in the study were organized around six career themes: business and finance, electronics and aerospace technology, health, public service, travel and tourism, and video technology. Two Academies admitted students in ninth grade, and seven admitted students in 10th grade. Most Career Academies enrolled 50 to 75 students per grade (the average Academy class size was similar to class sizes in the host high schools). A group of two to nine teachers taught classes exclusively within the Academy, and students had the opportunity to have the same teacher for several years. • <u>Academic plus vocational curricula related to the career theme</u>: Academies offered a sequence of career-related classes; students took two to four courses each year in their Academy. The remaining courses, including core academic requirements for graduation, were usually taken in the host high school. Researchers observed that the academic curricula and instructional practices were similar between the intervention and comparison conditions. • <u>Employer partnerships</u>: Formal relationships with employers in the community supported Academy programs and provided

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	career-related activities for students. A range of 3–54 employer partners were associated with each Academy. All Academies provided internship opportunities to the students through the employer partners, and many of these took place in the summer between the 11th and 12th grade. Many Academies set minimum criteria, mostly related to academic progress, for students seeking internship positions. Additionally, employer partners contributed funds and other resources, assisted Academies in identifying relevant activities for students, participated as speakers and mentors, and served on advisory boards of some Academies.
Comparison	Youth not randomly offered admission to a Career Academy constituted the comparison group. Most comparison group youth enrolled in a general education program in the host high school. Some enrolled in citywide magnet programs or specialty schools. About 3% enrolled in a Career Academy that was in the evaluation, despite being in the comparison group.
Methodology	The intervention group was randomly assigned to the Career Academy to which they applied, and 86% of the high-risk youth randomly assigned to the Academy group enrolled in an Academy. The intervention group could attend the Academy until graduation.
Primary outcomes and measurement	Staying in school: Positive effect. At the end of the students' projected 12th-grade year, 21% of the *Career Academy* group and 32% of the comparison group had dropped out of high school. Progressing in school: Positive effect. At the end of the students' projected 12th-grade year, *Career Academy* youth had earned an average of 19 credits and comparison youth an average of 17 credits, and 40% of *Career Academy* youth and 26% of comparison youth had earned sufficient credits to graduate. Completing school: No effect. Four years after students' projected 12th-grade year, there was no statistically significant difference between the percentage of high-risk *Career Academy* and comparison youth who earned a diploma or GED certificate; 83% of the youth in both groups had either graduated with a diploma or received a GED.
Cost	$600/student/year more than a district's average per pupil expenditure. (2004 dollars)
Staff training	Career Academy teachers came from a variety of academic and vocational disciplines but generally were similar to other teachers in host high schools. Some of the professional development opportunities offered to Academy teachers included learning how best to support students in a small learning environment and learning strategies for coordinating career development and employer-related activities.

4. Check and Connect

Element	Description
Study Citation	Sinclair, M. F., Christenson, S. L., Evelo, D. L., & Hurley, C. M. (1998). Dropout prevention for youth with disabilities: Efficacy of a sustained school engagement procedure. *Exceptional Children*, *65*(1), 7–21. Sinclair, M. F., Christenson, S. L., & Thurlow, M. L. (2005). Promoting school completion of urban secondary youth with emotional or behavioral disabilities. *Exceptional Children*, *71*(4), 465–482.
Research question	Does close monitoring of special needs students result in their staying in school, progressing in school, and completing school?
Participants	Participants in the 1998 study were special education students enrolled in ninth grade during the 1994–95 school year who were classified with a learning, emotional, or behavioral disability. Learning disabilities were the most common classification, with 75% of participants having this diagnosis. A little more than 40% of participants were classified as having a severe disability. Most participants were African-American (59%); most were males (68%); and most participated in the free or reduced-price lunch program (71%). Students were 15 years old, on average, when they entered ninth grade The 2005 study included special education students who entered ninth grade in 1996 and 1997. To be eligible for the study, participants had to be classified as having an emotional or behavioral disorder. Most students were African-American (64%); most were males (84%); and most participated in the free or reduced-price lunch program (70%). Students were 14.5 years old, on average, when they entered ninth grade.
Setting	Studies were conducted in Minneapolis public high schools.
Intervention	Monitor: *Check & Connect* relies on close monitoring of school performance, as well as mentoring, case management, and other supports. The program has two main components: "Check" and "Connect." The Check component is designed to continually assess student engagement through close monitoring of student performance and progress indicators. The Connect component involves program staff giving individualized attention to students, in partnership with school personnel, family members, and community service providers. Students enrolled in *Check & Connect* are assigned a "monitor" who regularly reviews their performance (in particular, whether students are having attendance, behavior, or academic problems) and intervenes when problems are identified. The monitor also advocates for students, coordinates services, provides ongoing feedback and encouragement, and emphasizes the importance of staying in school. The *Check & Connect* process continued in the 2005 study. The monitor stayed with the student throughout high school, even if the student transferred to another school within the district.
Comparison	In the 1998 study, control group students received *Check & Connect* in seventh and eighth grade but, after assignment to the control group, did not continue to receive these services when they entered high school. Control group students attended the

Element	Description
	same set of high schools attended by intervention group students. In the 2005 study, control group students attended the same schools as intervention students but did not receive *Check & Connect.*
Methodology	The 1998 study used a random assignment research design and included 94 high school students—47 in the intervention group and 47 in the control group. Students were randomly assigned just before entering the ninth grade. For the 2005 study, the intervention group participated in *Check & Connect* for four years, starting with their random assignment to the program in ninth grade. The post-attrition sample included 144 high school students—71 in the intervention group and 73 in the control group.
Primary outcomes and measurement	Staying in school: Positive effects. The 1998 study reported that ninth grade students enrolled in *Check & Connect* were significantly less likely than similar control group students to have dropped out of school at the end of the first follow-up year (corresponding to the end of the freshman year of high school)—9% compared with 30%. The 2005 study reported that *Check & Connect* students were significantly less likely to have dropped out of school at the end of the fourth follow-up year (corresponding to the senior year for students making normal progress)—39% compared with 58%. Progressing in school: Positive effect. The 1998 study reported that students in *Check & Connect* earned significantly more credits toward high school completion during ninth grade than did students in the control group. The 2005 study did not report on high school credit outcomes. Completing school: No effect. The 2005 study examined *Check & Connect*'s effect on whether students completed school "on time" (within four years of entering the ninth grade). The study indicated that there was no statistically significant or substantially important effect on on-time high school completion. At the end of the four-year follow-up period, combining receipt of high school diplomas and GED certificates, rates of on-time completion were about the same for *Check & Connect* and control group students—30% compared with 29%. (At this point, 31% of intervention students and 14% of control students were still enrolled in school but had not yet graduated.) Because of its short follow-up period, the 1998 study did not examine impacts on school completion.
Cost	$1,400/student/year. (2001-2002 dollars)
Staff training	Monitors participated in an initial orientation workshop. They also attended weekly or biweekly staff meetings and periodic staff development sessions. Each monitor received instructions on how to complete the monitoring sheet to ensure consistency across monitors and settings. Monitors submitted printouts of attendance records with their monitoring sheets for verification purposes.

5. Talent Development High Schools

Element	Description
Study Citation	Kemple, J. J., Herlihy, C. M., & Smith, T.J. (2005). *Making progress toward graduation: Evidence from the Talent Development High School model.* New York: MDRC.
Research question	Do the smaller learning communities established in the *Talent Development High Schools* result in students progressing through school more rapidly than students in comparison schools?
Participants	Many students selected for *Talent Development High Schools* had low test scores and were overage for their grade. More than three-quarters were African-American and about one in six were Hispanic. Poor attendance was common, with two-thirds missing at least 20% of scheduled school days during their ninth-grade year. In addition, many did not make regular progress toward graduation, with just half promoted to tenth grade at the end of their ninth-grade year. Students in the matched comparison schools were generally similar to *Talent Development High Schools* students on these characteristics.
Setting	The impact study was conducted in 11 nonselective public high schools in Philadelphia.
Intervention	Self-contained academies: The Philadelphia public school district implemented the *Talent Development High Schools* program in seven high schools. The district began to roll out the program in 1998, with one or two high schools launching *Talent Development High Schools* each year over a five-year period. All the Philadelphia *Talent Development High Schools* created ninth-grade academies on a separate floor or wing of the building, which were taught by teams of four to five teachers. Each school introduced block scheduling with 80- to 90-minute class sessions, introducing "double dose" math and English courses for ninth and tenth graders. These double sections of English and math allowed students to both prepare for and take college preparatory classes over the course of one academic year. Six of the seven schools offered after-hours programs for new or repeating ninth graders with serious attendance or discipline problems. Career academies: The program for students in grades 10 through 12 centered around career academies, in which students were divided into smaller "learning communities" around a broad career interest, and the curriculum was organized around a career theme. After-hours school: For students with attendance or discipline problems, school extended after-hours to provide them with extra assistance and support services.
Comparison	Matched comparison schools were nonselective Philadelphia high schools that did not implement *Talent Development High Schools*. The authors compared the intervention group both with students in the comparison schools and with students who attended the intervention schools prior to the implementation of *Talent Development High Schools*.
Methodology	The main analysis sample included first-time ninth-grade students from five high schools that began implementing *Talent Development High Schools* between 1999 and 2001 and six matched comparison high schools. Between two and four comparison schools were matched to each of the five intervention schools based on the racial/ethnic composition and

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	promotion rates of the schools' ninth-grade students. A comparison school could be matched to multiple *Talent Development High Schools*. The study compared the outcomes of ninth graders who entered *Talent Development High Schools* in the three years immediately after the program was implemented with those of ninth graders from these schools in the three years just before program implementation and with the outcome differences over the same time period for the matched comparison schools. The study examined three cohorts of students. Cohort 1 included students in the intervention and matched comparison schools who enrolled in the ninth grade during the first year of *Talent Development High Schools* implementation at the intervention schools. Similarly, Cohort 2 and Cohort 3 included students who were enrolled in the ninth grade during the second and third years of implementation, respectively. To ensure both an adequate follow-up and an adequate sample size for assessing program effectiveness, the evaluation uses second-year results based on Cohorts 1 and 2.
Primary outcomes and measurement	Progressing in school: Positive effects. Students using *Talent Development High Schools* earned an average of 9.5 course credits over the first two years of high school, while comparison group students earned 8.6 course credits. In addition, *Talent Development High Schools* students were more likely to be promoted to tenth grade than comparison students (68% vs. 60%). Both differences were statistically significant.
Cost	$350/student/year more than a district's average per pupil expenditure. (2005 dollars)
Staff training	Teachers at *Talent Development High Schools* were regular teachers employed by the Philadelphia Public Schools. "Curriculum coaches," who had been trained by the intervention developer, provided on-site technical assistance with implementing the *Talent Development High Schools* model. The developer also provided summer training institutes for staff.

6. Twelve Together

Element	Description
Study Citation	Dynarski, M., Gleason, P., Rangarajan, A., & Wood, R. (1998d). *Impacts of dropout prevention programs: Final report. A research report from the School Dropout Demonstration Assistance Program evaluation.* Princeton, NJ: Mathematica Policy Research, Inc.
Research question	Does the *Twelve Together* peer support and mentoring program succeed in keeping eighth graders in school and progressing in school?
Participants	The study sample of 500 students was comprised of two cohorts. Cohort 1 included 130 students in the intervention group and 116 students in the control group who were eighth graders during the 1992–93 school year. Cohort 2 included 133 students in the intervention group and 121 students in the control group who were eighth graders during the 1993–94 school year. Participants were, on average, just under 14 years old at the time of random assignment. About half of the sample was Hispanic; about a quarter was Asian or other ethnicities; about one in seven was white; and about one in 10 was black. Just over a quarter of participants lived in one-parent or no-parent households. About one student in seven lived in a household receiving public assistance, and about one in five did not speak English at home. Slightly more than a third of participants had discipline problems during the previous school year.
Setting	The *Twelve Together* study was conducted in nine middle schools in the Sweetwater Union High School District located in Chula Vista, California (near San Diego).
Intervention	Peer support and mentoring: The *Twelve Together* program was a peer support and mentoring program for eighth graders. The one-year voluntary program offered weekly after-school discussion groups. Each group of about 12 students included equal numbers of students from each of three academic risk groups (high, medium, and low) as categorized by the school. Groups were led by two trained adult volunteer facilitators who moderated discussions. Topics, chosen based on student interest, focused on personal, family, and social issues. In addition to attending discussion sessions, participants agreed to study regularly, not to skip classes, and to work to improve their grades. Facilitators, usually college students, also provided homework assistance. Extra-curricular activities: To promote group cohesion and develop teamwork skills, the program began with a weekend camping outing. It also provided other activities such as visits to college campuses and social events.
Comparison	Control group students did not participate in *Twelve Together* and attended the same middle schools as students in the intervention group. Control group students were more likely than intervention group students to have participated in remedial classes in reading, math, and other subjects (41% compared with 32%).
Methodology	The *Twelve Together* study used a randomized controlled trial research design. Random assignment occurred at the beginning of the eighth grade. To ensure a mix of academic abilities in the program, the schools divided applicants into high, medium, and low risk categories. Within these categories, schools paired similar students and ranked the pairs in terms of priority for

Element	Description
	entry into the program. Regardless of the number of applicants within each risk category, when filling a particular *Twelve Together* group, equal numbers of student pairs were chosen from each category, starting with the highest priority pair within each category. One student from each pair was then randomly selected to enter the group; the other was assigned to the control group. Therefore, each group included equal numbers of students from each of the three risk categories. To ensure adequate follow-up for assessing effects on staying in school and progressing in school, third-year follow-up outcomes are used. These results are drawn from a follow-up survey administered to students in cohort 1 in 1995, approximately three years after random assignment; 119 intervention group students and 100 control group students responded—for response rates of 92% and 86%, respectively. Because these response rates represent differential attrition of more than five percentage points, this study is rated as "meeting evidence standards with reservations." Researchers compared the baseline characteristics of third-year follow-up respondents in the two research groups on 13 demographic, socioeconomic, and school performance measures. A statistical test of the overall difference between the research groups on the full set of 13 baseline characteristics found that the groups were not significantly different.
Primary outcomes and measurement	Staying in school: Substantively important effect. At the end of the three-year follow-up period, 8% of *Twelve Together* students had dropped out of school compared with 13% of control group students. Although this difference was not statistically significant, it was large enough to be considered substantively important. Progressing in school: No effect. At the end of the three-year follow-up period, *Twelve Together* had no effect on progressing in school as measured by the highest grade completed.
Cost	$307/student/month for 9 months or $2,763/student/year. (2004 dollars)
Staff training	Most *Twelve Together* facilitators were college students or recent college graduates from San Diego State University. During the time the program was operating, the university offered a credit bearing course to train students to be *Twelve Together* facilitators.

Dropout Intervention Programs in Developing Countries

7. Brazil: The Bolsa Familia Program of Conditional Cash Transfers

Element	Description
Study citation	Glewwe, P. & Kassouf, L. (2010). *The Impact of the Bolsa Escola/Familia Conditional Cash Transfer Program on Enrollment, Grade Promotion, and Dropout Rates in Brazil*. http://www.apec.umn.edu/faculty/pglewwe/documents/BrBolsa6.pdf
Research question	What is the impact of this conditional cash transfer program on educational outcomes of primary and lower secondary students?
Participants	Poor families with children aged 6-15 (1st-8th graders)
Setting	Brazil (all over the country)
Intervention	Conditional cash transfers. To qualify for *Bolsa Familia*, a family's monthly per capita income had to be less than about $60, which is below one-half of Brazil's minimum wage. Those with monthly incomes from $30 to $60/month were eligible if they had children under 16 years old or a breastfeeding or pregnant woman. Families with monthly per capita incomes below $30 were classified as very poor and received a payment of $25/month even if they had no children and no pregnant or breastfeeding women and a payment per child/per woman. To receive the per child/per woman payment, each child aged 6 to 15 had to be enrolled in school and attend at least 85% of school days, each pregnant or breastfeeding women had to obtain prenatal and postnatal health care services, and children aged 0 to 7 had to have all recommended vaccinations. To enroll in *Bolsa*, families filled out an application, available at their *municipio*'s city hall, which requested information on income and household composition. This information determined eligibility, subject to the *municipio's* budget for *Bolsa*. Bolsa funds were transferred directly from the Ministry of Social Development to households via bank cards, and the municipio government's only role was to identify beneficiaries.
Comparison	Bolsa and non-Bolsa students were compared using school census data.
Methodology	The study's estimation method compared changes in enrollment, dropout and grade advancement rates using eight years of school census data (from 1998 to 2005) across schools that adopted the Bolsa program at different times. The study estimated regressions that controlled for year fixed effects, school fixed effects, state-level time trends in schools that adopted Bolsa in 2001, and analogous trends for schools that adopted Bolsa in 2002 or later, and time trends based on enrollment in 1998.
Primary outcomes and measurement	Enrolling school: Positive effect. The program increased enrollment in Brazil by about 5.5 percent in grades 1-4 and by about 6.5 percent in grades 5-8. Staying in school: Positive effect. The program lowered dropout rates by about 0.5 percentage points for children in grades 1-4 and by 0.4 percentage points for children in grades 5-8.

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	Progressing in school: Positive effect. The program raised grade promotion rates by about 0.9 percentage points for children in grades 1-4 and by about 0.3 percentage points for children in grades 5-8.
Cost	Families with incomes from $30 to $60/month received $7.50 per month per beneficiary (either a child age 0 to 15 or a pregnant or breastfeeding woman), up to a maximum of three (to avoid incentives to raise fertility). Families with incomes under $30/month received $25/month plus $7.50 per beneficiary (up to three). (2005 dollars)
Staff training	There was no staff training.

8. Burkina Faso: The BRIGHT Program to Upgrade Education

Element	Description
Study citation	Levy, D., Sloan, M., Linden, L., & Kazianga, H. (2009). *Impact Evaluation of Burkina Faso's BRIGHT Program.* Final Report. Mathematica Policy Research, Inc.
Research questions	(1) What was the impact of the Burkinabe Response to Improve Girls cHances to Succeed (BRIGHT) program on school enrollment? (2) What was the impact of the program on test scores? (3) Were the impacts different for girls than for boys?
Participants	Primary school students in 132 rural villages
Setting	Burkina Faso. The 10 provinces of the country that have the lowest girls' primary completion rates were included (Banwa, Gnagana, Komandjari, Namentenga, Oudalan, Sanmentenga, Seno, Soum, Tapoa, and Yagha)
Intervention	Construction: The program constructed 132 primary schools in the rural villages in which girls' enrollment rates were lowest. Each was designed according to a prototype that included three classrooms, housing for three teachers, a water pump and separate latrines for boys and girls. School canteens (daily meals for all): Daily meals were offered to all students at the schools, both boys and girls. Take-home rations: Girls who had a 90 percent attendance rate received 8 kilograms of dry cereal each month to take home. School kits and textbooks: Textbooks and school supplies were provided to all students. Mobilization campaign. The mobilization campaign brought together communities and those with a stake in the education system to discuss the issues involved in, and barriers to, girls' education. The campaign included informational meetings; door-to-door canvassing; gender-sensitivity training for ministry officials, pedagogical inspectors, teachers, and community members; a girls' education day; radio broadcasts; posters; and awards for female teachers. Literacy: The literacy program included both adult literacy training and mentoring for girls. Local partner capacity building: Training included local officials in the Ministry of Education, child care center monitors, and teachers. Specific training included completing school registers.
Comparison	The evaluation design involved comparing children in the 132 BRIGHT villages (participant group) with children in 161 similar villages that had applied to participate in BRIGHT but were not chosen (comparison group).
Methodology	Household survey: A face-to-face survey was conducted which included questions on household demographics, children's

Element	Description
	educational outcomes (such as enrollment and attendance), and parents' perceptions of education. The target sample was a random sample of 30 households with school-aged girls in each of the 293 villages that applied to the BRIGHT program—8,790 households in total. That survey included tests in math and French administered to all children ages 5 to 12 who lived in the household, regardless of whether they were enrolled in school. A total of 21,730 children took the tests. The response rate was about 97 percent. School survey: A school survey was administered in two waves. In the first wave, information on the schools' characteristics was collected from school officials. In the second wave, attendance and enrollment data were collected for children who were enrolled in school (based on parents' reports from the household survey). The target sample for the survey was the three primary schools closest to the villages that applied to the BRIGHT program (within 10 kilometers) and regularly attended by children from those villages. This yielded 360 schools. The response rate for the school survey was about 99 percent. The statistical technique used to estimate program impacts is regression discontinuity, which takes advantage of the fact that all 293 villages that applied to the program were given an eligibility score by the Burkina Faso Ministry of Education based on their potential to improve girls' educational outcomes.
Primary outcomes and measurement	Enrolling in school: Positive effect. BRIGHT schools showed an improvement of about 20 percentage points in enrollment, based on household survey data, and 16 percentage points, based on school data. Thus, BRIGHT was responsible for increasing enrollment rates from about 35 percent to 55 percent (household-reported outcome) or from about 31 percent to 47 percent (school-based outcome). Attending school: Positive effect. The impact on whether a child was present on the day of a visit to the school was about 16 percentage points. Test scores: Positive effects. The impacts on both math and French scores were approximately 0.4 standard deviations. This increase in test scores is larger than many other successful education interventions in the developing world, which have effect sizes typically between 0.1 and 0.3 standard deviations. An impact of this size implies that, for a student who started at the 50th percentile of our sample, attending a BRIGHT school is predicted to increase his or her test score to approximately the 80th percentile. Girls versus boys: Sometimes stronger for girls. The impacts of BRIGHT were positive for both boys and girls. In terms of enrollment, the impacts for girls were about 5 percentage points higher than the impacts for boys. In terms of test scores, the impacts for girls and boys were statistically indistinguishable.
Cost	No information on per school cost.
Staff training	Training encompassed local officials in the Ministry of Education and Child Care Center. Specific training included the

Element	Description
	completion of school attendance sheets.

9. Cambodia: Cambodia Education Sector Support Project Scholarship Program (CSP)

Element	Description
Study citation	Filmer, D., & Schady, N. (2009). *School Enrollment, Selection and Test Scores*. Development Research Group. The World Bank.
Research question	Do programs that provide scholarships to poor students have a large effect on school enrollment, attendance, and test scores?
Participants	3800 students. In large CSP schools with total enrollment above 200, 50 students with the lowest value of the score were offered a scholarship for 7th, 8th, and 9th grade; in "small" CSP schools, with total enrollment below 200 students, 30 students with the lowest value of the score were offered the scholarship.
Setting	Cambodia (all over the country)
Intervention	Scholarships were given to poor children for three years of the lower secondary school cycle. The government first selected 100 lower secondary schools throughout the country to participate in the program. The CSP-eligible schools were selected because they served poor areas, as indicated by a poverty map, and because there appeared to be high levels of school non-enrollment and dropout as indicated by administrative data. Then all of the primary "feeder" schools (a school was designated a feeder school if it had sent graduates to a given secondary school in recent years) were mapped to each CSP-eligible secondary school. Within the primary feeder schools, all students in 6th grade, the last year of primary school, filled out an application form for the scholarship program. The responses were then aggregated into a composite "dropout-risk score," with the weights given by the extent to which individual characteristics predicted the likelihood that a child would fail to enroll in 7th grade after completing 6th grade.
Comparison	Comparisons were made between CSP recipients and non-recipients.
Methodology	Three data sources—(i) the composite dropout-risk score, (ii) individual characteristics that make up the score for all scholarship applicants (26,537), and (iii) household (3,225 randomly selected applicants and their families) and school-based data were used. The study also conducted four unannounced visits to the 100 CSP schools to physically verify school attendance. Further, math and vocabulary tests were administered to understand the effect of the intervention on test scores. The basic identification strategy used for the study was regression discontinuity.
Primary outcomes and measurement	Staying in school: Positive effect. CSP scholarships had a substantial effect on school attendance, about 20 to 25 percentage points. Enrollment: Positive effect. Children offered scholarships were approximately 20 percentage points more likely to be enrolled than they would have been in the absence of the program. Test scores: No effect. Children who had received scholarships did no better on tests of mathematics and vocabulary than those in the comparison group 18 months after the beginning of the program.

Element	Description
Cost	Within every large school, the 25 students with the lowest dropout-risk score were offered a scholarship of $60, and the 25 students with the next lowest scores were offered a scholarship of $45; in small schools, the comparable numbers were 15 students with scholarships of $60, and 15 with scholarships of $45.
Staff training	No trainings were provided.

10. Colombia: The PACES School Voucher Program

Element	Description
Study citation	Angrist, J., Bettinger, E., Bloom, E., King, E., & Kremer, M. (2002). Vouchers for private schooling in Colombia: Evidence from a randomized natural experiment. *The American Economic Review*, *92*(5), 1535-1558.
Research question	Do lottery winners progress farther in school, obtain higher test scores and have a lower probability of teen cohabitation or employment?
Participants	Families that lived in urban neighborhoods classified as falling into the two lowest (of six) socioeconomic strata were eligible to participate in the lottery, if the family had a child entering grade six (beginning of secondary school) who was 15 years old or younger. Interviews were attempted with nearly 3,000 lottery applicants, and completed with 1,618, obtaining an overall response rate of 54%. Of the 1,618 reached by telephone, 830 received vouchers (51.3%); 807 were male (49.9%); and the average age was 12.6.
Setting	Colombia: Students were selected from three cohorts: the 1993 cohort from Jamundi, a suburb of the city of Cali, and the 1995 and 1997 cohorts from the city of Bogota.
Intervention	School vouchers: The Programa de Ampliación de Cobertura de la Educación Secundaria (PACES), the largest school voucher program to date in Colombia, provided over 125,000 pupils with vouchers covering somewhat more than half the cost of private secondary school, provided that the student was promoted from year to year on schedule.
Comparison	Comparison was done between winners and losers of the lottery.
Methodology	A quasi-experimental research design was used to compare educational and other outcomes of lottery winners and losers. The results provide evidence on program effects that are similar to those arising from a randomized trial.
Primary outcomes and measurement	Staying in school: No effect. "A survey of three applicant cohorts shows no significant differences between lottery winners and losers in enrollment three years after application, with most pupils in both the winner and loser groups still in school. But lottery winners were 15 percentage points more likely to attend private schools than public schools." Progressing in school: Positive effect. Lottery winners were 5 to 6 percentage points less likely to repeat grades. Girls were found to be affected slightly more favorably than boys as the study found not only their grade repetition reduced; but also they spent .14 more years in school. Completing school: Positive effect. "…[L]ottery winners had completed an additional 0.1 years of school and were about 10 percentage points more likely than losers to have completed eighth grade, primarily because they repeated fewer grades." Test scores: Minimal positive effect. "Achievement tests were administered to a subset of the pupils surveyed. The test results

Element	Description
	suggest that, on average, lottery winners scored about 0.2 standard deviations higher than losers, a large but only marginally significant difference. The effect on girls is larger and more precisely estimated than the effect on boys." Non-educational outcomes: Positive effect. "…[T]he voucher program affected non-educational outcomes. In particular, lottery winners were less likely to be married or cohabiting and worked about 1.2 fewer hours per week (again, mostly a difference for girls). Both of these results suggest an increased focus on schooling among lottery winners." Usage: Positive effects. Lottery winners were 15 percentage points more likely to attend private schools rather than public schools. "…only about 90 percent of lottery winners had ever used the voucher or any other type of scholarship, while 24 percent of losers received scholarships from other sources." "Most lottery winners would have attended private school anyway, at least for a few years, and therefore reduced their educational expenditure in response to the program. On the other hand, winners who were induced to switch from public to private schools greatly increased their educational expenditure, since the voucher covered only about half the cost of private school. On balance, winners' gross school fees exceeded those of losers by about 70 percent of the amount they received from the voucher. Finally, voucher recipients may have had greater incentives to focus on school because vouchers could only be renewed for those pupils who did not repeat grades."
Cost	$190 per student; approximately half of the cost of private school. (1998 dollars). The government paid approximately $24 more per lottery winner than the cost it would normally take to put that child in a public school placement.
Staff training	No staff training was provided.

11. Colombia: Conditional Cash Transfers

Element	Description
Study citation	Barrera-Osorio, F., Bertrand, M., Linden, L., & Perez-Calle, F. (forthcoming). Improving the design of conditional transfer programs: Evidence from a randomized experiment in Colombia. *Applied Economic Journal: Applied Economics*.
Research question	Do adaptations to conditional cash transfer (CCT) programs improve academic participation?
Participants	A total of 13,433 children participated in the study. Of these, 7,984 children were provided cash transfers: 3,427 participated in a "basic" treatment; 3,424 in a "savings" treatment; and 1,133 in a "tertiary" treatment. For the basic and savings treatments, all students had finished at least grade 5; for the tertiary treatment, all had completed at least grade 8. All children had to be enrolled but not yet graduated from grade 11 and the children's families had to have been classified into the bottom two categories on Colombia's poverty index.
Setting	Colombia: San Cristobal and Suba, areas within the city of Bogota
Intervention	Three simultaneous interventions involving educational subsidies were implemented: Basic treatment: Traditional bi-monthly conditional cash transfers based on attending school at least 80% of the time. Savings treatment: Traditional bi-monthly transfers but distribution of 2/3 of funds based on good school attendance and the remaining 1/3 at the time of school re-enrollment for the next year. Tertiary treatment: Traditional bi-monthly transfers providing 2/3 of funds based on good school attendance. Upon graduation students received the additional 1/3 thereby providing incentive to graduate and matriculate to a higher education institution.
Comparison	Comparison was done between four groups—the basic, savings, and tertiary treatments, and control groups. The control group for the basic/savings treatment was 4,056 students; the control group for the tertiary treatment was 1,393 students.
Methodology	The study undertook a large recruitment drive, resulting in 13,433 students deemed eligible for the cash transfers; 7,984 were randomly allocated to the treatment groups. Eligible registrants in San Cristobal were randomly assigned between a control group, the basic treatment, and the savings treatment. The tertiary treatment was evaluated separately in an experiment in Suba, where students were randomly assigned to either the tertiary treatment or a control group. A simple difference model was used to makes comparisons between different subsets of the sample without controlling for any covariates.
Primary outcomes and measurement	Taken as a whole, the cash incentive treatments generated significant changes: Attending school: Positive effect. The basic treatment increased attendance by 3.3 percentage points while the savings treatment increased attendance by 2.9 percentage points. Both interventions are effective, and there is no evidence that the savings treatment is less effective than the basic treatment at boosting attendance, despite the lower monthly payments. On the

Element	Description
	tertiary experiment, the estimated treatment effect is an increase in enrollment of a little more than 5 percentage points. There were spillover effects of the treatments, both within families and peer networks. For families, the spillover effects were negative for the children not in the program. For instance, there was evidence of lower school attendance and more labor market work for an untreated child with a treated sibling compared to an untreated child with a similarly untreated sibling. The effect was particularly strong for girls. Staying in school: Positive effect. The basic treatment had almost no effect on re-enrolling; however, the savings treatment significantly increased re-enrollment by about 4 percentage points. The savings treatment was especially effective at improving the enrollment of the lowest income students and the students with the lowest participation rates. The tertiary treatment increased re-enrollment by 3.7 percentage points. It, too, was most effective with the students least likely to re-enroll. Enrolling in a tertiary institution: Positive effects. The savings and tertiary treatments increased matriculation rates at tertiary institutions: the savings treatment increased enrollment by 9.4 percentage points while the tertiary treatment proved particularly effective, increasing matriculation by 48.9 percentage points Completing school: Positive effect. The overall average treatment effect is 4.0 percentage points.
Cost	Basic treatment: Approximately $15 per month. The payments were made bi-monthly. Saving treatment: Approximately $10/month paid on a bi-monthly basis, while the remaining third was held in a bank account. The accumulated funds were then made available to students' families during the period in which students prepare to enroll for the next school year. Tertiary treatment: Approximately $10 for good attendance paid monthly. Upon graduating the student earned the right to receive a transfer of $300. (2005 dollars)
Staff training	There was no staff training.

12. Honduras: The PRAF Program of Conditional Cash Transfers and Payments to the PTA

Element	Description
Study citation	Glewwe, P. & Olinto, P. (2004). *Evaluating the Impact of Conditional Cash Transfers (CCT) on Schooling: An Experimental Analysis of Honduras PRAF Program*. Final Report submitted to USAID by the International Food Policy Research Institute.
Research question	Does the Programa de Asignación Familiar (PRAF) conditional cash transfer programs improve educational outcomes?
Participants	Children aged 6-13 in primary school
Setting	Honduras. 70 of the poorest rural municipalities in the country.
Intervention	Cash transfers to families: The demand side incentive for education was generated using monetary payments to families for each child aged 6-12 who was enrolled in the first four years of primary school and attended regularly. A maximum of up to three children per family were eligible (this was in addition to any monetary payments received from the demand side incentives of the health intervention). To be eligible for a payment, the child needed to be enrolled by the end of March and maintain an attendance rate of 85%. Cash transfers to Parent-Teacher Associations (PTAs): The supply side education intervention consisted of payments to the PTA associated with each primary school. These associations were required to obtain legal status and to prepare plans, including budgets, to improve the quality of the education provided by their respective schools. Cash transfers to pregnant women: The demand side intervention for health consisted of monetary transfers to pregnant women and to mothers of children less than three years of age. The voucher was provided only for women who had visited health clinics every month. Cash transfers to primary health care teams: The supply side intervention for health consisted of monetary transfers to primary health care teams, which were formed by members of the community and local health care workers (nurses and, when available, doctors). To receive the transfers, each team prepared a plan with specific tasks and a budget specifying what equipment and medicine would be purchased for the health center.
Comparison	Comparison was done among four groups: 1. Demand side intervention only (20 municipalities); 2. Demand and supply side interventions (20 municipalities); 3. Supply side intervention only (10 municipalities); 4. Control group without intervention (20 municipalities).
Methodology	The 70 municipalities were assigned randomly to the four different groups; the first three groups received both education and health interventions. Baseline data were collected before the program was implemented in the municipalities in groups 1, 2, and 3. Follow up surveys were collected two years later. From each of the 70 municipalities, eight communities ("clusters")

Element	Description
	were randomly selected, and from each cluster 10 dwellings were randomly selected for data collection. The information collected from each of the 560 clusters included: a) whether the community had a primary school, a public hospital or public transport; b) daily wage rates for local agricultural and non-agricultural work; c) the availability of work away from the community; d) a small amount of information on local crime; and e) prices for a large number of food items and local daily wages rates. Questionnaires were also given to three randomly selected primary schools in each of the municipalities, collecting the following data: a) general information on the school (days open, number of grades, etc.); b) characteristics of teachers; c) pedagogical aids (library books, dictionaries, paper etc.); and d) school organizations (PTA, teachers association, etc.).
Primary outcomes and measurement	Enrolling in school: Positive effect. The demand side intervention of the program increased enrollment rates by 1-2 percentage points. Attending school: Positive effect. The demand side intervention of the program increased school attendance (conditional on enrollment) by about 0.8 days per month. Staying in school: Positive effect. The demand side intervention of the program reduced the dropout rate by 2-3 percentage points. Progressing in school: Positive effect. The demand side intervention increased annual promotion rates to the next grade by 2-4 percentage points. Non-educational outcomes: No effect. There was no effect on child labor force participation. In addition, the supply side intervention had no effect on any outcomes.
Cost	The education cash transfer was $5 per student per month. Each family could receive a stipend for a maximum of three children. PTAs were eligible for $1,600 to $23,000; on average, the PTAs received $4,000 per year. Each health voucher was worth approximately $4; each family could receive up to three per month. Each health care team received, on average, $6,000 per year; but the amount varied from $3,000 to $15,000, depending on the size of the population served by the health center. (2000 dollars)
Staff training	The non-effect of supply side was mainly because the intervention was never really implemented. Although teachers received training in some communities with that intervention, the funds that were to be given to these communities to improve their local schools were never released due to legal wrangling over the propriety of providing those funds.

13. India: Tutoring or Computer-Assisted Learning

Element	Description
Study citation	Banerjee, A., Cole, S., Duflo, E., & Linden, L. (2007). Remedying education: Evidence from two randomized experiments in India. *Quarterly Journal of Economics, 122*(3), 1235-1264.
Research question	Do intensive tutoring or computer-assisted learning programs increase student achievement and reduce the dropout rate?
Participants	14,972 students in 165 schools participated in the remedial education study in 2001 (the year that meets methodological criteria for inclusion as an effective program); 5,945 students in 111 schools participated in computer-assisted learning in 2002 and 2003 (both years met methodological criteria).
Setting	India: The remedial education program (called the Balsakhi Program) was run in poor urban areas of Mumbai and Vadodara in western India. The computer-assisted learning program was run only in Vadodara.
Intervention	Remedial education: The remedial education program used young women from the community as teaching assistants. They worked on basic skills with children who reached grades 3 or 4 without mastering literacy and numeracy. The children were taken out of the classroom to work with these tutors for 2 hours of the 4-hour school day. Computer-assisted learning: This second intervention focused on mathematics. Children in grade 4 had two hours (one hour during the school day and the other either before or after school) of shared computer time each week, during which time they played games that involved solving mathematics problems whose level of difficulty corresponded to the child's ability. A teacher was in the room but did not instruct students.
Comparison	The 24 schools not in the program in Vadodara served as controls (Ns of children not given).
Methodology	Schools in the intervention group were randomly assigned to a treatment. Some schools had a teaching assistant in grade 3; others had a teaching assistant in grade 4.
Primary outcomes and measurement	Attending school: No effect. Neither intervention increased attendance. Staying in school: No effect. Neither intervention had any effect on the dropout rate. Test scores: Positive effects. The remedial education program increased test scores by 0.14 standard deviations in the first year; most of these gains were due to large increases by the students who were the furthest behind. The computer-assisted learning program increased mathematics scores by 0.35 standard deviations during the first year and 0.47 standard deviations during the second year. Cost-effectiveness: Remedial education is more cost-effective. Looking at costs per gain in standard deviation units, the authors concluded that hiring the teaching assistants was by far the less expensive of the two programs. It was also more cost-

Element	Description
	effective than hiring additional new teachers at a higher salary.
Cost	Teaching assistants earned $10-15/month and cost $2.25/student/year. Computer programs cost $15.18/student/year. (2004 dollars)
Staff training	Teaching assistants received two weeks of training at the beginning of the year and reinforcement training throughout as needed. Teachers working with the computer-assisted learning program received five days of computer training prior to their placement in the computer labs. Teachers in control schools received no training.

14. India: Monitoring Teacher Attendance and Using Financial Incentives

Element	Description
Study citation	Duflo, E., Hanna, R. &. Ryan, S. (2010). *Incentives work: Getting teachers to come to school*. MIT mimeo. http://econ-www.mit.edu/files/5995
Research question	Can monitoring and financial incentives reduce teacher absences and increase children's learning?
Participants	113 rural community schools were randomly assigned: 57 as treatment schools and 56 as controls.
Setting	Rajasthan, India. Udaipur is a sparsely populated, hard to access region of Rajasthan. The 57 community schools in the sample were open six hours a day and had about 20 students each. All students were taught in one classroom by one teacher, who was recruited from the local community and had, on average, a 10th grade education. When the teacher was absent, the school was closed.
Intervention	Teacher attendance: Because of the remote location of the community schools in the study, it was difficult to regularly monitor them and teacher absenteeism was high. The local NGO that ran the schools gave the 57 teachers in the treatment group a camera, along with instructions to have one of the students take a picture of the teacher and students at the start and close of each school day. The cameras had tamper-proof date and time functions, allowing for the collection of precise data on teacher attendance that was then used to calculate teacher salary. Each teacher was paid according to a nonlinear function of the number of valid school days for which they were actually present, where a "valid" day was defined as one for which the opening and closing photographs were separated by at least five hours and both photographs showed at least eight children. Salaries ranged from Rs 500 to Rs 1,300 (or $11.50 to $29.50). The teachers received Rs 500 if they attended fewer than 10 days in a given month, and Rs 50 for any additional day (up to a maximum of 25 or 26 days, depending on the month).
Comparison	Comparison was done with 56 similar rural schools. In these comparison schools, teachers were paid a fixed rate for the month (Rs 1000). They were reminded that regular presence was a requirement of their job and they could be dismissed for poor attendance.
Methodology	Two sources of attendance data were collected. First, data on teacher attendance was collected through one random unannounced visit per month in all schools. Second, the camera provided an "eye-witness" account for the treatment schools. By comparing the absence rates obtained from the random checks across the two types of schools, the study determined the program's effect on absenteeism. For schools that were open during the visit, the enumerator wrote down how many children were sitting in the classroom, whether anything was written on the blackboard, and whether the teacher was talking to the children. The enumerator also conducted a roll call and checked to see whether any of the absent children had left school or had enrolled in a government school, and then updated the evaluation roster to include new children.

Element	Description
	To determine whether child learning increased as a result of the program, pre- and post-tests of three basic competency exams were administered to all children. Those who could write were given a written exam; those who could not had an oral exam. The oral exam tested simple math skills (counting, one-digit addition, simple division) and basic Hindi vocabulary skills, while the written exam tested for these competencies plus more complex math skills (two-digit addition and subtraction, multiplication and division), the ability to construct sentences, and reading comprehension. Thus, the written exam tested both a child's ability to write and ability to handle material requiring higher levels of competency relative to the oral exam.
Primary outcomes and measurement	Staying in school: No significant effect. The study found that daily student attendance was similar in situations where the teacher showed up often and in situations where the teacher was absent often. Likewise, the dropout rate was slightly lower for the treatment schools but statistically insignificant. Test scores: Positive effect. Children's test scores in language and math rose by 0.17 standard deviations. Completing school: Positive effect. 26 percent of students in the treatment schools graduated to the government schools, compared to only 16 percent in the comparison schools. This 10 percentage point difference implied a 62 percent increase in the graduation rate and is significant. Teacher absenteeism: Positive effect. Over the 30 months in which attendance was tracked, teachers in the intervention schools had absenteeism rates of 21%, compared to 44% at the baseline and 42% in the comparison schools. Instructional time: Positive effect. A child in a treatment school received 9 percentage points (or 30%) more days of instruction than a child in a comparison school.
Cost	Approx. $23 per teacher per month. (2003 dollars)
Staff training	There was no staff training.

15. Jamaica: The PATH Program of Conditional Cash Transfers

Element	Description
Study citation	Levy D. & Ohls, J. (2007). *Evaluation of Jamaica's PATH Program*. Final Report. Mathematica Policy Research, Inc.
Research question	(1) What was the impact of the Programme of Advancement Through Health and Education (PATH) program on school enrollment? (2) What was the impact of the program on test scores? (3) Were the impacts different for girls than for boys?
Participants	Poor children from birth through age 17
Setting	Jamaica.
Intervention	Child assistance grants provided health and education monies for eligible poor children through age 17. The receipt of health grants for children through age 6 (not enrolled in school) was conditioned on their visiting a health clinic every two months during the first year of their lives and twice a year thereafter. The receipt of education grants for children aged 6 through 17 was conditioned on regular school attendance (at least 85 percent of school days). Social assistance grants were also provided to needy adults but are not discussed here.
Comparison	Comparison was done between a sample of 2,500 households eligible for PATH (participant group) with another group of households which were similar to the participant group but were not deemed eligible for PATH (comparison group).
Methodology	Data for the evaluation were obtained through: 1. Qualitative interviews conducted with PATH program staff, as well as the staff of schools and health care facilities serving PATH clients, and post office staff, 2. Focus group discussions held with PATH clients about their experiences with the program, 3. Data extracted from the management information system used to operate the program, and 4. Household surveys conducted at several points of time, including a baseline survey of participant and comparison group households and a follow-up survey of the same households after the participant group had received several disbursements of benefits. The evaluation was structured around a quasi-experimental design that used detailed household survey data to determine whether PATH was reaching its intended population and increasing the human capital of poor households as measured by school attendance and health care usage. The evaluation also included a qualitative analysis based on focus groups and executive interviews to assess how well the program had been implemented.
Primary outcomes	Attending school: Positive effect. Multiple regression analysis indicated that PATH increased school attendance by approximately 0.5 days per month. The estimated increase was about 3 percent over the baseline level, and it was statistically

Element	Description
and measurement	significant. Progressing in school: No effect. There was no evidence that PATH affected longer term outcomes such as grades or advancement to the next grade. Non-educational outcomes: Positive effect. PATH was successful in meeting its objective of increasing the use of preventive health care for children in PATH families. The results suggested that health care visits for children aged 0-6 increased by approximately 38 percent as a result of the program.
Cost	The average monthly benefit per child receiving a health or education grant was about $6.50. (2005 dollars)
Staff training	There was no staff training.

16. Kenya: Paying for School Uniforms

Element	Description
Study citation	Duflo, E., Dupas, P., Kremer, M., & Sinei, S. (2006). *Education and HIV/AIDS prevention: Evidence from a randomized evaluation in Western Kenya*. World Bank Policy Research Working Paper 4024.
Research question	Do interventions on education and HIV/AIDS prevention reduce teenage childbearing?
Participants	70,000 students enrolled in grades 5 to 8 in 328 primary schools; 246 schools received one of five forms of "treatment." The study also involved about 3,000 upper primary teachers in some of the treatment schools, of whom 445 participated in the HIV training program.
Setting	Kenya. Two rural districts, Bungoma and Butere-Mumias in the western part of the country.
Intervention	Teacher training: The AIDS Control Unit of the Ministry of Education trained teachers on a wide range of topics, including basic facts on HIV/AIDS, condom demonstration, information on voluntary counseling and testing, and AIDS education methodology. The participants reviewed material in the HIV/AIDS Facilitator's Handbook, learned both how to discuss HIV/AIDS issues as part of classes devoted to other topics and how to devote full-period lessons to HIV/AIDS activities, and prepared lesson plans under facilitators' supervision. At the end of the training, teachers were asked to prepare an "action plan" for HIV/AIDS education in their school, including how they would reach out to other teachers in the school and integrate HIV/AIDS into the timetable. In addition to delivering the classroom-based activities, trained teachers were advised to set up health clubs to encourage HIV avoidance through active learning activities such as role plays. Awareness raising: Half the schools that received teacher training reinforcement were encouraged to organize a debate in 2005. All students in grades 7 and 8 were supposed to attend the debate. The motion of the debate was: "*School children should be taught how to use condoms.*" The debate was followed by an essay competition. The essay question was: "*Discuss ways in which you can protect yourself from HIV infection now and at later ages in your life.*" Students also received information about HIV prevalence by age and sex. School uniforms: To reduce the cost of schooling, a local NGO distributed free uniforms to each student who was enrolled in grade 6 (average age 14). About 10,000 uniforms were distributed. Children still enrolled during the second year received another school uniform.
Comparison	Schools that received the interventions were compared to the 82 that did not receive any intervention. Specifically, 41 schools received teacher training only, 42 received teacher training and condom debate, 83 received school uniforms only, 40 received teacher training and school uniforms, and 40 schools received all three interventions.
Methodology	The randomization for teacher training was done after stratifying by the geographical division of the school, average performance of the school on the Kenya Certificate of Primary Education exam of 2001, and the gender ratio among upper

Element	Description
	primary students. Randomization for uniforms was done after stratifying by whether or not the school was receiving training reinforcement on HIV education and by geographical location, school achievement and gender ratio. To obtain data on school enrollment and attendance, NGO field officers made 6 school visits, during which they conducted a roll call using the list of students enrolled at the baseline, and enquired on the whereabouts of missing students. A simple regression framework was used for estimation of effects.
Primary outcomes and measurement	Staying in school: Positive effect. Paying for school uniforms helped the students stay in school longer. There were reduced dropout rates, lower rates of teen marriage, and lower rates of pregnancy and childbearing. Girls in schools where free uniforms were provided were 2.5 percentage points less likely to have dropped out, which corresponds to a 15% decrease. For boys, there was also a 15% decrease. Non-educational outcomes: Mixed effect. After two years, the teacher training program had little impact on students' knowledge and self-reported sexual activity and condom use, or on teen childbearing. However, the teacher training increased students' tolerance toward people with HIV/AIDS, and girls exposed to the program were more likely to be married to the fathers of their children. Its overall impact on exposure to the HIV risk was unclear.
Cost	The teacher training and health club follow-up cost $550 per school. There was no cost for the condom debate. Uniforms cost about $6 per student. (2003 dollars)
Staff training	There was teacher training on the HIV/AIDS curriculum.

17. Kenya: Teacher Incentives

Element	Description
Study citation	Glewwe, P., Ilias N., & Kremer, M. (2003). *Teacher Incentives*. Cambridge, MA: Abdul Latif Jameel Poverty Action Lab. Paper No. 11.
Research question	What are the effects of teacher incentive program on student learning outcomes and teacher behavior?
Participants	50 primary schools (grades 4 to 8)
Setting	Busia and Teso districts in Kenya
Intervention	The program offered schools the opportunity to provide monetary bonuses to teachers in grades 4 to 8 based on the performance of the school as a whole on each year's district exams. All teachers who taught these grades in the "Top scoring schools" and "Most improved schools" received bonuses. In all, prizes were awarded to 24 of the 50 participating schools. Since Busia and Teso districts had separate district exams, bonuses were offered separately in each district in proportion to the number of schools in the district. In order to discourage schools from forcing weaker students to repeat, drop out or not take the exam, students who did not take the exam were assigned low scores. Further in order to discourage schools from recruiting strong students to take the exams, only students enrolled in school as of February 1998 were included in the computation of the school mean score.
Comparison	Comparison was made between 50 schools that received the intervention and 50 schools that did not.
Methodology	Out of 100 schools which the Ministry of Education designated as particularly in need of assistance, 50 were randomly selected for the treatment, while the other 50 served as a comparison group. Data were collected on many types of teacher effort – attendance, homework assignment, pedagogical techniques, and holding extra exam preparation sessions – as well as data on student test scores after the end of the program. The program ran for two years beginning in 1998, with 1996 exam scores used as the base from which to measure improvements.
Primary outcomes and measurement	Staying in school: No effect. Dropout rates were no lower in program schools. Repetition: No effect. Repetition rate was insignificantly lower in incentive schools. Test scores: Positive effect. Students in schools with a teacher incentive program were more likely to take exams and had higher test scores in the short run. Teacher attendance: No effect. Teachers in program schools had no higher attendance rates or homework assignment rates. However, teachers in program schools increased test preparation activities and encouraged students enrolled in school to take the test.

Element	Description
	Non-educational outcome: Teacher behavior (pedagogy) was not significantly different between the incentive and comparison schools.
Cost	ICS offered bonuses that ranged in value from 21-43% of typical teacher monthly salaries, comparable to merit pay programs in the United States.
Staff training	There was no staff training.

18. Kenya: Textbook Provision

Element	Description
Study citation	Glewwe, P., Kremer, M., & Moulin, S. (2007) *Many Children Left Behind? Textbooks and Test Scores in Kenya*. Cambridge, MA: The Abdul Latif Jameel Poverty Action Lab.
Research question	Does the provision of official textbooks substantially raise educational outcomes as measured by student test scores?
Participants	100 low-performing primary schools
Setting	Kenya. The Busia and Teso districts in Western Kenya
Intervention	Official textbook provision: As sharing textbooks is a common practice in Kenya, a 60% textbook per pupil ratio was provided in English and science, and a 50% ratio in math, giving nearly all students shared access to a textbook.
Comparison	Comparison was done between four groups of 25 schools: Group 1 received treatment in 1996, Group 2 in 1997, Group 3 in 1998, and Group 4 in 2000. In each year, program schools were compared to those not yet receiving the program.
Methodology	In late 1995, the Ministry of Education district office selected 100 of the primary schools in Kenya's Busia and Teso districts to participate in the School Assistance Program (SAP). These schools were chosen because they were thought to need assistance and (with one exception) had not participated in a previous textbook distribution program. The median school average test score among the SAP schools in 1995 was somewhat lower than the average among all 333 schools in Busia and Teso. The 100 schools were randomly divided into four groups of 25. One group was selected to receive the official government textbooks in early 1996. In 1997, another group was selected to receive grants equal to $2.65 per student to be used to purchase educational material (including textbooks). Group 3 and 4 schools received similar grants in early 1998 and 2000, respectively. A pre-test in the form of a district exam was administered to all schools before the textbooks were distributed, and district exams scores were collected at the end of the subsequent program years for comparison data. Classroom activities and dropout rates were also monitored.
Primary outcomes and measurement	Staying school: No effect. No evidence that textbook provision reduced either grade repetition or dropout rates. Progressing in school: Positive effect. Textbooks increased progression to secondary school for eighth graders. This provides evidence for the hypothesis that the program mostly benefited strong students, since only strong students reach grade 8 and have a hope to progress to secondary school, while many students in the lower grades were actually unable to read the textbooks. Students in grade 8, a selective and academically strong group, were 5 percentage points more likely to enter secondary school in the second program year than comparison school students.

Element	Description
	Test score: No effect. After one school year there was no evidence that the textbook provision increased average test scores.
Cost	Groups 2, 3, and 4 received a grant equal to US$2.65 per student, or on average $727 per school, 43% of which was spent of textbooks. No information was provided regarding the cost of the program for Group 1.
Staff training	Each grade and subject that was given textbooks also received one copy of the associated teacher's guide.

19. Kenya: Girls' Scholarship Program

Element	Description
Study citation	Friedman, W., Kremer, M., Miguel, E., and Thornton, R. (2011). *Education as Liberation?* Cambridge, MA: The Abdul Latif Jameel Poverty Action Lab.
Research question	Do merit based scholarship program increase student and teacher attendance?
Participants	Grade 6 girls from 69 primary schools, followed up 4-5 years after the scholarships were given.
Setting	Busia and Teso districts, Kenya. The girls in this setting are socially marginalized and politically disempowered. They are female and young in a society where older males hold authority, and they come from the relatively politically weak Luhya and Teso ethnic groups. Approximately 85% of primary school age children in western Kenya are enrolled in school, but only about one-third of students finish primary school. Dropout rates are typically higher for girls; in 2001 the 6th grade dropout rate was 10% for girls and 7% for boys.
Intervention	The Girl's Scholarship Program (GSP) was carried out by International Child Support (ICS) Africa. The scholarship program provided awards to grade 6 girls in treatment schools whose performance on the government's standardized end-of-year exam placed them in top the 15%.
Comparison	Comparison was made between 34 primary schools (1640 students) that received the scholarship and 35 schools (1652 students) that did not receive the scholarship. GSP treatment and control schools in Busia are similar on observable baseline characteristics indicating that the randomization worked in generating similar groups.
Methodology	The randomization into treatment and control schools was carried out using a computer random number generator, after first stratifying by administrative division and participation in a previous NGO program. Out of a set of 127 schools, 64 were randomly invited to participate in the program. To assess the persistence of the academic gains and other long term impacts of the program, a follow-up survey was undertaken approximately four to five years after the GSP competition. The final analysis sample with baseline survey data, 2001 or 2002 test score, and follow up survey data included 1385 girls, nearly equally balanced between treatment and control schools.
Primary outcomes and measurement	Staying in school*:* Positive effect. Girls in the treatment schools were 7.8 percentage points more likely to still be enrolled in school 4 years after the initial scholarship award Progressing in school: Positive effect. Girls who received scholarships were 8.6 percentage points more likely to have attended at least some secondary school. Test scores: Positive effect. The program raised test scores by 0.19 standard deviations for girls enrolled in schools eligible for the scholarship. These effects were strongest among students in Busia, where the program increased scores by 0.27 standard

Element	Description
	deviations. There were no effects found in Teso. Large positive test score gains were also found among Busia girls with low chances of winning the award, suggesting that there were positive externalities on learning. The average program effect for girls corresponds to an additional 0.2 grades worth of primary school learning, and these gains persisted one full year following the competition. There is also evidence of positive program externalities on the entire class; boys (who were ineligible for the awards) saw scores increase by 0.08 standard deviations on average.
Cost	The award included a grant of 500 KSh (US$ 6.40 at the time) paid to the girl's school to cover school fees, and a cash grant of 1000 KSh (US$ 12.80) paid to the girl's family to pay for other school expenses in each of the two years following the competition covering the last two years of primary school. Thus, the total award for winners was valued at nearly US$38 over two years.
Staff training	There was no staff training.

20. Kenya: Deworming

Element	Description
Study citation	Miguel, E. & Kremer, M. (2004). Worms: Identifying impacts on education and health in the presence of treatment externalities. *Econometrica*, 72(1), 159-217.
Research question	Does deworming improve school participation and academic outcomes?
Participants	30,000 children between the ages of 6-18 from 75 rural primary schools.
Setting	Kenya. The Southern Busia district of the country is a poor and densely-settled farming region and has the highest helminth infection rate.
Intervention	Medicating children: Following World Health Organization recommendations, schools with geohelminth prevalence over 50 percent were mass treated with albendazole every six months, and schools with schistosomiasis prevalence over 30 percent were mass treated with praziquantel annually. All treatment schools met the geohelminth cut-off in both 1998 and 1999. Six of 25 treatment schools met the schistosomiasis cut-off in 1998 and 16 of 50 treatment schools met the cut-off in 1999. Following standard practice, the medical protocol did not call for treating girls thirteen years of age and older due to concerns about the potential teratogenicity of the drugs. Worm prevention education: Treatment schools also received worm prevention education through regular public health lectures, wall charts, and the training of teachers. Health education stressed the importance of hand washing to avoid ingesting roundworm and whipworm larvae, wearing shoes to avoid hookworm infection, and not swimming in infected fresh water to avoid schistosomiasis.
Comparison	Comparison was done between three groups of 25 schools: Group 1 received treatment in 1998 and 1999, Group 2 in 1999, and Group 3 in 2001. Thus, in 1998, Group 1 schools were the treatment group while Groups 2 and 3 were the comparison; in 1999, Groups 1 and 2 schools were the "treatment" while Group 3 was the "comparison."
Methodology	The schools were first stratified by administrative subunit (zone) and by their involvement in other nongovernmental assistance programs, and were then listed alphabetically and every third school was assigned to a given project group. Pupil and school questionnaires were administered in early 1998 and again in early 1999. Prior to treatment, the groups were similar on most demographic, nutritional, and socioeconomic characteristics, but despite random assignment—which produced groups with similar characteristics—Group 1 pupils appeared to be worse off than Group 2 and 3 pupils along some dimensions, potentially creating a bias against finding significant program effects. There were no statistically significant differences across Group 1, 2, and 3 schools in enrolment, distance to Lake Victoria, school sanitation facilities, pupils' weight-for-age, 10-asset ownership, self-reported malaria, or the density of other primary school pupils located within three kilometers or three to six kilometers. Helminth infection rates in the surrounding geographic zone were also nearly identical

Element	Description
	across the three groups. School attendance rates did not differ significantly in early 1998 before the first round of medical treatment, although this baseline attendance information comes from school registers, which were not considered reliable. Randomization of deworming treatment across schools allowed estimation of the overall effect of the program by comparing treatment and comparison schools, even in the presence of within-school externalities. The study estimated cross-school externalities by taking advantage of variation in the local density of treatment schools induced by randomization. Although randomization across schools made it possible to experimentally identify the overall program effect and cross-school externalities, the study relied on non-experimental methods to decompose the effect on treated schools into a direct effect and within-school externality effect.
Primary outcomes and measurement	Attending school: Positive effect. The average school participation gain for treatment schools relative to comparison schools across both years of the project is 5.1 percentage points, reducing overall school absenteeism by at least one-quarter with particularly large gains among the youngest children. Greater effects for the younger children may have been due in part because of higher rates of moderate-to-heavy infection. There was also a greater effect on reducing absenteeism for boys and young girls as opposed to older girls, which was consistent with the differences in treatment. However, there were significant effects for the older girls as well, which could have been because the improved participation of younger siblings allowed them to attend school more regularly. Test scores: No effect. There was no evidence that deworming increased academic test scores. Non-educational outcomes: Positive effect. After treatment, infection rates went down. Infection rates at the end of year 1 were 27 percent in Group 1 (intervention) and 52 percent in Group 2 (comparison). Other health outcomes (reported sickness, anemia) were better in the treatment group.
Cost	The treatment cost per year was $3.50. (1999 dollars)
Staff training	Teachers from treatment schools received training on worm prevention.

21. Madagascar: Primary Education Management

Element	Description
Study citation	Nguyen, T. & Lassibille, G. (2008). *Improving Management in Education: Evidence from a Randomized Experiment in Madagascar*. Cambridge, MA: The Abdul Latif Jameel Poverty Action Lab.
Research question	Does promoting top-down and local monitoring of the school improve education quality and output?
Participants	District and subdistrict administrators and teachers from 3774 primary schools in 30 public school districts with a focus on schools with higher rates of grade repetition.
Setting	Madagascar: All geographic areas in the country
Intervention	District-level intervention: In all 15 treatment districts, district administrators received operational tools and training that included forms for supervision visits to schools, procurement sheets for school supplies and grants. Subdistrict-level intervention. In randomly selected subdistricts, staff were also given tools and training. School-level intervention: In randomly selected schools within the subdistricts, teachers were given pedagogical and administrative tools (e.g., lesson planning, attendance, student progress) and parents were involved in monitoring school activities, which entailed school meetings that provided them with a school "report card" and allowed them to work together to do something about education at the village.
Comparison	A comparison was done with 1721 schools from 207 subdistricts within 15 districts that did not receive any treatment. The impact of top-down interventions alone versus in combination with local accountability was also compared.
Methodology	Student attendance data was collected during unannounced visits and student test scores from an achievement test administered independently. In addition to spot-checking teacher and student absenteeism, school directors and teachers were interviewed about their usage of the tools and their administrative and pedagogical practices.
Primary outcomes and measurement	Attending school (school-level intervention): Positive effect. 4.3 percentage point increase in mean attendance. Test scores (school-level intervention): Positive effect. Test scores of students in this group are 0.1 standard deviations higher than those in the comparison group. District and sub-district administrators' behaviors: Minimal effect. Although each tool was used by 90% of the sub-district heads and by more than half of the district heads, on average, they did not actively involve the parents and the local community in monitoring the school. Teacher lesson planning (school-level intervention): Positive effect. The teachers prepared lesson plans and evaluated their students more frequently. Teachers' lesson planning practices improved by 0.26 standard deviations, on average, and student evaluation practices by 0.14 standard deviations.

Element	Description
	Other teacher behaviors (school-level intervention): No effect. Teacher attendance and the school's communication with parents did not improve.
Cost	No information on cost.
Staff training	District and sub-district officials received training on the operational tools. Teachers received training on the pedagogical and administrative tools.

22. Malawi: Conditional Cash Transfers

Element	Description
Study citation	Baird, S., McIntosh, C., & Özler, B. (2009). *Designing cost-effective cash transfer programs to boost schooling among young women in sub-Saharan Africa*. World Bank Policy Research Working Paper 5090.
Research question	Do school girls receiving conditional cash transfers stay in school? Do girls who have left school return when they receive cash transfers?
Participants	The study began with a sample of 3,805 girls between the ages of 13 and 22 (who had never been married), assigning 1,225 to the treatment group. At the end of a year, a total of 3,545 girls were located for a follow-up survey; 1,141 in the treatment group. Treatment girls consisted of those who had already dropped out of school (baseline dropouts) and those who were in school at baseline (baseline school girls). For the SDPP project, only results for the baseline school girls are of interest.
Setting	Malawi: Zomba was chosen as the site for the study for several reasons: • It has a large enough population within a small enough geographic area rendering field work logistics easier and keeping transport costs lower. • It is a highly populated district, but distances from the district capital (Zomba Town) are relatively small. • Zomba has a high rate of school dropouts and low educational attainment. According to IHS-2 (2004), the biggest reason for dropout from school is financial. • HIV/AIDS rates of women aged 15-49 in Zomba are the highest in the country at 24.6% (MDHS, 2004). The sample was drawn from three strata: urban, rural areas near Zomba Town, and rural areas far from Zomba Town.
Intervention	Conditional cash transfers: Incentives (in the form of school fees and cash transfers) were given to current school girls and young women who had recently dropped out of school to stay in or return to school. The payments include cash transferred to the parents, cash directly to the girl, and direct payment of school fees for girls in the conditional treatment arm attending secondary schools. As part of the program, school attendance of all the conditional cash transfer recipients was checked every month and payment for the following month was withheld for any student whose attendance rate was below 75% in the previous month. No attendance checks were conducted for the unconditional treatment recipients.
Comparison	Comparison was made between a treatment group that received conditional cash transfers, another receiving unconditional transfer, and a control group receiving no transfers.
Methodology	A sample of 176 Enumeration Areas (EAs) was randomly drawn from the total of 550 EAs in Zomba, and treatment status was assigned at the EA level. The 176 selected EAs were divided into two equally sized groups: treatment and control. Furthermore, baseline school girls in each treatment EA were randomly assigned to receive either conditional or unconditional transfers. In the treatment EAs, all baseline dropouts were offered conditional cash transfers. The sample of 88 treatment EAs was further divided into three groups based on the treatment status of baseline school girls: in 46 EAs a randomly determined share of schoolgirls received conditional transfers; in 27 EAs a randomly determined share of school girls received

Element	Description
	unconditional transfers; and in the remaining 15 EAs only baseline dropouts received treatment while the baseline school girls received no transfers. In each selected EA all eligible dropouts and 75%-100% of all eligible school girls were sampled where the percentage depended on the age of the baseline school girl. To estimate the causal impacts of the program, the study estimated a difference-in-difference regression using individual fixed effects. The regressions are weighted to be representative of the study EAs.
Primary outcomes and measurement	The results for the baseline school girls are as follow: Attendance related to size of cash transfer: No effect. "There is no evidence that an increase in the total transfer size has a strong marginal impact on school attendance over the receipt of the minimum transfer size." Staying in school: Minimal positive effect. "The one-year dropout treatment effect of 4.6 percentage points represented more than a 40% decrease in dropout from the control rate of 10.9%." Literacy in English: Some positive effects. "Among those in school at baseline, …the only impacts are seen at the lowest grade levels (Standards 5 and 6) and thereafter literacy has achieved high enough levels that no upward treatment effects are detected." Completing school: No effect. "There is … no statistically significant impact among baseline school girls."
Cost	The amount given to the parents was randomly chosen, ranging from $4 to $10/month, with all recipients in a given EA receiving the same amount. The individual transfer amount was determined by lottery, specifically when girls picked a number out of an envelope to win an amount between $1 and $5/month. Cash transfers took place monthly. (2008 dollars)
Staff training	No staff training was provided.

23. Mexico: The PROGRESA Program of Conditional Cash Transfers

Element	Description
Study citation	Schultz, T. (2000). *School subsidies for the poor: Evaluating a Mexican strategy for reducing poverty*. Washington, DC: International Food Policy Research Institute.
Research question	What is the impact of school subsidies on school enrollment?
Participants	3rd -9th graders from 495 poor rural communities in Mexico were a part of the study. Of these localities, 314 were in the Programa de Educatión, Salud y Alimentación (PROGRESA) program and 181 were not.
Setting	Mexico. The seven poorest states—Hidalgo, Michoacan, Puebla, Queretaro, San Luis Potosi, Veracruz, and Guerrero—were chosen for the intervention.
Intervention	Conditional cash transfer. PROGRESA provided mothers in poor rural communities with education grants if their 3rd to 9th grade children attended school at least 85% of the time. To qualify, the student had to be currently enrolled and have completed the previous grade.
Comparison	Comparisons were made between children in randomly selected poor communities whose mothers received the grant and those whose mothers qualified for the subsidies but did not receive them.
Methodology	Both the treatment and control populations were surveyed twice in the year before the program was announced and followed for two years after the program commenced, providing a total of five survey cycles. The study focused on enrollment rates within groups of children stratified by the number of grades they had completed. This partitioning of the sample facilitated estimation of program effects. For a child to qualify for a PROGRESA educational grant they had to have completed the 2nd to 8th grade and be currently enrolled in the next grade. Two samples were analyzed from the base census and follow-up surveys: a balanced panel and a pooled sample. The panel sample included all children aged 5 to 16 observed in the October 1997 household census, who completed the age, schooling, and enrollment questions, for whom the schooling of co-resident parents was reported, and the locality was matched to other community information files. The panel sample was further restricted to include only those children who could be followed and matched in the subsequent pre-program survey round in March 1998, and then in three surveys in October 1998, May 1999, and November 1999. The second larger pooled sample included all children aged 5 to 18 who were observed at least once and could be linked to sufficient household data to estimate the basic enrollment model.
Primary outcomes and measurement	Enrolling in school: Positive effect. At the primary school level, enrollment rates increased by .96 percentage points for girls and .74 percentage points for boys (rates for boys and girls both started at 94%). At the secondary level, enrollment rates increased by 9.3 percentage points for girls and 5.8 percentage points for boys (rates for boys started at 73$ and for girls at 67%).

Element	Description
	Staying in school: Positive effect. The largest difference was found in children who had completed grade 6 and were thus qualified to enroll in junior secondary school; for this group, the enrollment rate increased by 11.1 percentage points, from the pre-program rate of 58% to 69%. For girls, the enrollment rates increased by 14.8 percentage points compared with the boys, whose enrollment increased by 6.5 percentage points. The average difference-in-difference was 3.6 percentage points over all grade levels for both sexes combined. This was estimated as an approximately two-thirds of a year of school greater for the PROGRESA participants.
Cost	The size of the subsidy increased fourfold from grade 3 to grade 9. The subsidies ranged from $7.74/2 months for grade 3 (both sexes) to $24.86/2 months for 9th grade boys and $28.18/2 months for grade 9 girls. The subsidies were slightly larger for girls than for boys at the junior secondary level, since girls lagged behind boys in enrollment by about six percentage points at this level. The amount received by a girl in grade 9 was about 44% of the typical male day-laborer's wage in an agricultural community. (1998 dollars)
Staff training	There was no staff training.

24. Nepal: Menstruation and Education in Nepal

Element	Description
Study citation	Oster, Emily and Rebecca Thornton. (2009). *Menstruation and Education in Nepal*. NBER Working Paper Series no: 14853. Cambridge: National Bureau of Economic Research.
Research question	What is the impact of providing modern sanitary products on girls' schooling?
Participants	7th and 8th graders (198 girls). Half of the girls received the intervention.
Setting	Nepal. Four schools (two urban schools and two peri-urban) in and around Bharatpur City in Chitwan District were chosen for the intervention.
Intervention	Girls in the study were randomly allocated a menstrual cup for use during their monthly period and were followed for fifteen months to measure the effects of the intervention. A menstrual cup is a small, silicone, bell-shaped device which is used internally during menstruation; the cup fills and must be emptied and washed approximately every twelve hours. With proper care, it is reusable for up to a decade.
Comparison	Comparisons were made between girls who received the menstrual cup and those who did not.
Methodology	At the first meeting, a baseline survey was administered to both girls and their mothers. The survey included questions on basic demographics, schooling, menstruation, and self-esteem. At the end of the initial meeting, the randomization was carried out through a public lottery, drawing numbers out of a bag. Girls whose numbers were drawn were assigned to the treatment group with their mother or guardian. The treatment girls were asked to remain at the meeting and each treatment girl and her female guardian were given a menstrual cup. After the initial meeting girls were followed for approximately fifteen months (through January 2008). In February 2008 a second meeting was held in each school. At this meeting a follow-up survey, similar to the baseline survey, was administered. One hundred and eighty-three of the girls in the study attended the follow-up meeting. Questions from the baseline and follow-up surveys allowed for measuring changes in behaviors and attitudes in response to being allocated a menstrual cup. In both surveys, girls were asked questions about their school attendance and performance, as well as measures of self-esteem, empowerment, and health. The randomized allocation of the cup allowed for non-biased estimates of the difference between treatment and control girls. The study used two ways to make the estimates more precise with difference-in-difference estimates—(1) using data from before the intervention as a control and (1) using data during menstrual days and non-menstrual days.
Primary outcomes and	Attend school: No effect. While girls were 3 percentage points less likely to attend school on days of their period, there was no significant effect of being allocated a menstrual cup on school attendance.

Element	Description
measurement	Test scores: No effect. There were no effects on test scores, self-reported measures of self-esteem or gynecological health. The low impact of modern sanitary products may be due, in part, to the fact that sanitary products only help with management of menstrual blood, rather than cramps or fatigue. Girls in the study reported that the primary reason they missed school during their periods is due to cramps. Other effects: Despite the lack of schooling effects, this study does support some value to these products. Among the treatment girls, 61 percent used the cup between the baseline and follow-up meetings and use was equally as high among the control girls who were later given the cup. In addition to reporting ease and convenience with mobility and management of menstrual blood, girls who were in the treatment group spent 20 minutes per day less doing laundry on days they had their period. The results suggested that there are indeed barriers for girls related to menstruation. However, merely providing modern sanitary products to girls may not be the solution to removing or reducing these barriers.
Cost	Participation in the study was contingent on attendance at the first study meeting at which time girls received pens and stickers, and mothers received 100 Nepali Rupees ($1.45).
Staff training	There was no staff training.

25. Pakistan: Female School Stipend Program

Element	Description
Study citation	Chaudhury, N. & Parajuli, D. (2006). *Conditional Cash Transfers and Female Schooling: The Impact of the Female School Stipend Program on Public School Enrollments in Punjab, Pakistan*. Impact Evaluation Series No. 9, The World Bank.
Research question	Do conditional cash transfer programs increase female enrollment in public schools?
Participants	All female students in grades 6 to 8 in one of 15 districts in the Punjab province with literacy rates of 40% or below were eligible for a stipend.
Setting	Punjab, Pakistan. Punjab is the largest and wealthiest province in Pakistan where literacy and enrollment rates are higher and gender differences are lower compared to other provinces. Despite being the leading province in Pakistan in terms of educational outcomes, a variety of problems existed—insufficient allocation of resources to the education sector, systemic weakness in public sector delivery as a result of over-centralization, inadequate management, and poor performance of the schooling system in terms of quality, access, and governance.
Intervention	Conditional cash transfer. Under the program each girl received a stipend conditional on her being enrolled in grade 6-8 in a government girl's school in a target district and conditional on her maintaining average class attendance of at least 80 percent. Funds were transferred directly to the student's household via postal money order from the Education District Office.
Comparison	Comparison was done among four groups: 1. Girls' schools in program districts (Treatment: 1,779 girls' schools from the 15 treatment districts), 2. Girls' schools in non program districts (Control 1: 3,156 girls' schools from the 19 non-treated districts), 3. Boys' schools in program districts (Control 2: 2,247 boys' schools from the 15 treatment districts),and 4. Boys' schools in non-program districts (Control 3: 3,265 boys' schools from the 19 non-treated districts).
Methodology	The study drew upon a panel database of schools from the provincial Education Management Information Systems school censuses of 2003 (before the program) and 2005 (after the program). The study considered estimates obtained using empirical approaches including double differencing (DD) and triple-differencing (DDD) in combination with a regression-discontinuity design (RDD) and controlling for covariates.
Primary outcomes and measurement	Attending school: Positive effect. The study found an average treatment effect on proportion of school attendance for 10- to14-year-old girls of about 12 percentage points. The preferred estimator derived from a combination of DDD and RDD empirical strategies suggested that the average program impact was an increase of 6 girl students enrolled per school in terms of absolute change and an increase of 9 percent in terms of relative change.
Cost	Approx. $3 per student per month. (2005 dollars)

Element	Description
Staff training	There was no staff training.

26. The Philippines: Multilevel Learning Materials, School Lunches, and Parent-Teacher Partnerships

Element	Description
Study citation	Tan, J. P., J. Lane, & Lassibille, G. (1999). Schooling Outcomes in Philippine Elementary Schools: Evaluation of the Impact of Four Experiments. *World Bank Economic Review, 13* (3), 493-508.
Research question	Does the provision of multilevel learning materials or school lunches, either with or without a parent-teacher partnership, reduce the rate of student dropout and improve student learning?
Participants	3,953 students and 180 teachers in 29 primary schools (one of the schools selected to be a control had to be dropped).
Setting	The Philippines: The project was implemented in two low-income districts in each of five regions of the country. Each selected district had to meet at least three of five poverty criteria relating to education, health, housing, unemployment, and household consumption.
Intervention	Four interventions were undertaken: 1. Provision of multilevel learning materials (MLM), which are pedagogical materials for teachers to help them pace their teaching according to the differing abilities of their students, 2. Provision of school lunches (SL), a free meal on days school was in session, 3. Multilevel learning materials combined with a parent teacher partnership (PTP), which comprised a series of regular (usually monthly) group meetings, and 4. School lunches combined with a parent teacher partnership. The first approach allows teachers to pace teaching to different student needs and was much less expensive than school feeding. Parent-teacher partnerships cost almost nothing but could help with student learning both at home and at school.
Comparison	Similar schools in each district were randomly assigned as (a) MLM, MLM-PTP, control and (b) SL, SL-PTP, and control.
Methodology	In each district, three schools were selected according to the criteria that each: • Offered all grades of instruction in the elementary cycle, with one class of pupils per grade; • Had a high dropout rate, based on administrative records; • Was not located in an area with security risks; and • Did not offer any school feeding services. In one district in each region the three schools were randomly assigned to multilevel learning materials (MLM), MLM with parent-teacher partnership (PTP), or control; in the other, the three schools were assigned to school lunch (SL), SL-PTP, or control. The program continued for an entire school year. Data were gathered on the year prior to the interventions and the year of the interventions.
Primary outcomes	Staying in school: Positive effects. Schools using multilevel learning materials, with or without a parent-teacher partnership, experienced a decline in the dropout rate of 10% or more.

Element	Description
and measurement	Test scores: Consistent effects in Filipino and English. Regression analyses showed that, controlling for background variables and initial test scores, students in schools using multilevel learning materials with a parent-teacher partnership did significantly better in first-grade academic performance in Filipino and English. These students also improved in mathematics but the differences were not statistically significant. The authors concluded that the combination of multilevel learning materials and parent-teacher partnerships appeared to be the most cost-effective intervention.
Cost	Costs of each intervention were not provided.
Staff training	Teachers who would be using the multilevel learning materials were given a week-long training course prior to implementation.

Appendix D:
Summary of Intervention Studies That Did Not Meet SDPP's Rigorous Criteria

Table D-1: International Dropout Intervention Programs That Did Not Meet All SDPP Criteria (in alphabetical order by country)

Authors	Significant Outcome(s)	Target Group	Services	Methodology	Costs	Effects
27) Bangladesh, **Female Stipend Program** (Khandker et al., 2003; and Fuwa, 2001)	• Attend school	6th-10th grade girls in rural areas	**Financial:** • Conditional cash transfer if girls attended school at least 75% of the time, obtained at least a 45% score on the annual school exam, and remained unmarried until sitting for the Secondary School Certificate or turning 18 • Schools attended by recipients received a tuition subsidy	QED: Household-level and school-level surveys before and after implementation; no equivalence at baseline	Sum ranges from $0.37/month/6th grade girl to $0.88/month/10th grade girl	• Female enrollment increased by 2% above the trend rate of increase observed before the stipend program to close the gender gap • Dropout rates remained high: estimated for girls at about 18% from class 6 to 7 and rising to 24% from class 9 to 10, much higher than the male dropout rates of 15% and 18%, respectively
28) Bangladesh, **Food for Education (FFE) Program** (Ahmed & del Ninno, 2002 and Meng & Ryan, 2007)	• Attend school • Stay in school	Poor rural families with children in primary school	**Financial:** • Free monthly ration of 12-16 kg rice or 15-20 kg wheat, depending on number of children attending school at least 85% of the time	QED, 2002: Village census questionnaire on 600 households in 60 villages in 30 unions and school questionnaire for 110 schools in the same 30 unions, collected in September-October 2000; no data on baseline equivalence QED, 2007: Probit regression model and propensity score matching combined with difference-in-differences on primary school participation rates; lack of demonstrated baseline equivalence of	$3/student/month (1998 dollars)	2002: • Enrollment in FFE schools increased by 35% in first two years; enrollment in non-FFE schools increased by 2.5% • Attendance was 70% in FFE schools and 58% in non-FFE schools • Dropout rates were about 6% for FFE children compared to 15% for nonbeneficiary children in FFE schools • Test scores were lower in FFE schools (45% of total points) versus non-FFE schools (53%) 2007: FFE • Increased school attendance by 15-27%

Authors	Significant Outcome(s)	Target Group	Services	Methodology	Costs	Effects
				groups		• Increased the duration of schooling by .7 to 1.05 years
29) Brazil (Graeff-Martins et al., 2006)	• Attend school • Stay in school	Primary school children in two schools with high dropout rates in Porto Alegre (urban)	**Academic:** • Two teacher workshops on child development and managing emotional & behavioral disorders **Personal/social:** • Letters to families on school dropout • Three meetings with parents on dropping out • Music contest on school dropout • Telephone helpline for parents to discuss problems • 1-day program for 7th graders on advantages of staying in school • Mental health assessment for students absent 10 consecutive days or more followed by referral	QED: Two schools were randomly selected from the 10 in the city with the highest dropout rates; 561 students were enrolled in the treatment school; 707 in the comparison; one school is insufficient	No cost information was provided	• Children in the treatment school averaged 8 days of absence, significantly less than the 11 days of students in the comparison school • About 4% of children in the treatment school dropped out, significantly less than the 10% of children in the comparison school. This difference was due to an increase in the dropout rate at the comparison school. • 18 of the 38 dropouts who underwent a mental health assessment (45%) returned to school
30) India, **The Shankarpalle Experiment** (Reddy & Sinha, 2010)	• Stay in school	Primary school children in Shankarpalle Mandal, Andhra Pradesh (urbanicity not	**Academic:** Summer school to prepare overage children to enter classes according to their age **Structural:** • Campaign to abolish child labor and enroll every child in school	Data collected from official records; no comparison group	No cost data reported.	• Children have moved out of Class I; the variance in the number of children in Classes I to X has reduced significantly • The total number of school-going children increased from 9,063 in 1995-1996 to 12,206 in 2005-2006 • Dropout rate between Class I

Authors	Significant Outcome(s)	Target Group	Services	Methodology	Costs	Effects
		described)	• Policy of automatic promotion from Class I to II • Policy to enroll children throughout the year • Policy to allow primary schools to extend to Class VII			and II declined from 28.5% in 1996-97 to 10.1% in 2004-2005 • Dropout rate between Class VII and VIII decreased from 21.3% in 1996-97 to 12.6% in 2004-2005
31) Indonesia, (Cameron, 2009)	• Stay in school	Primary, lower secondary and upper secondary students in poor rural villages	**Financial:** Scholarship recipients identified by a school committee; awards conditional upon continued enrollment	QED: "100 Village Survey" of 120 households in each village, collected in August and December of 1998; treatment and comparison groups not comparable	• $10/year/ primary student • $20/year/lower secondary student • $30/year/upper secondary student (1998 dollars)	• Dropouts from lower secondary school decreased by 3 percentage points or 38% from previous level • Dropouts from primary school were not affected by the program • Estimates of dropout could not be made at the upper secondary level due to small sample size
32) Peru (Santiago & Chinen, 2008)	• Attend school • Stay in school	Preschool and primary-age children enrolled in public schools in Ayacucho, Apurimac, and Huancavelica departments (rural)	**Health:** • Provision of school breakfast	QED: Children in schools in two neighboring departments (Apurimac and Cusco) served as the comparison group; no baseline equivalence testing	$16.40/child/year	• Grades 1-6 children in the treatment group averaged 90-95% attendance each month compared to 80-87% in the comparison group • Grades 1-6 children in the treatment group showed a decrease in dropout rate from 1995 to 1998 (difference from comparison schools not provided) • Results on 4th grade achievement tests were mixed, with the smaller multiple-grades-in-one-class schools benefitting from the treatment and the full-grade schools not

Authors	Significant Outcome(s)	Target Group	Services	Methodology	Costs	Effects
33) The Philippines, **Project No Drops** (SEAMEO, 1995)	• Stay in school	Primary school children at risk of dropping out (rural and urban)	**Academic**: • Expanded learning system for children in school (e.g., study groups, peer tutoring, learning buddies, home tutoring • Extensive in-service teacher training • Combination of classroom- and home-based schooling for temporary or seasonal school leavers • Condensed and fast-track learning for permanent school leavers • Non-formal education for parents **Financial:** • Free school supplies, medical care for potential school leavers **Health:** • Bio-intensive gardening to support free snacks **Personal/social:** • Early warning system for teacher to identify students at-risk of dropping out • Close parental monitoring	QED: 6 comparison schools were chosen by school officials, 1 to match each treatment school; no data on equivalence at baseline	Cost data not provided	• No statistics were computed; however, the dropout rate decreased in all 6 of the treatment schools (in 4 schools to 0), while it decreased in 3 comparison schools (in 1 school to 0) and rose in the other 3 • Children achieved functional literacy levels more often in treatment than comparison schools

Authors	Significant Outcome(s)	Target Group	Services	Methodology	Costs	Effects
			Structural: • Apprehension of truants • Campaign on importance of education			
34) Zambia (Chatterji et al., 2010)	• Stay in school	Orphans and vulnerable children aged 8 to 19 in Lusaka (urban)	**Academic:** • Community school **Financial:** • Payment of school fees • Provision of school supplies **Health:** • School feeding • Clinic services **Personal/social:** • Counseling • HIV prevention education	QED: 2,922 OVCs, 1,242 treatment and 1,680 matched comparison children; the "nearest neighbor" idea used to create comparison group; surveys of status taken in 2003 and 2006; no measures of equivalence at baseline	No cost data provided	• Treatment children were significantly more likely to still be in school at the follow-up • Treatment children were more likely to be in the appropriate grade for their age