School-level analysis of educational block grant support for secondary schools in Southwest Uganda

Ha, Grace
SCHOOL-LEVEL ANALYSIS OF EDUCATIONAL BLOCK GRANT SUPPORT
FOR SECONDARY SCHOOLS IN SOUTHWEST UGANDA

by

GRACE HA
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GRACE HA

ABSTRACT

Objective: It is already known from earlier research studies that block grant support can provide educational benefit to students that are orphaned and vulnerable in secondary schools in East Africa. This thesis examines the impact of block grant support given to secondary schools in Southwest Uganda to see whether or not block grant support benefits the entire student population.

Study Population: The Republic of Uganda is located in East Africa. Block grant support was given to secondary schools starting in 2006 in the districts of Isingiro, Mbarara, and Ntungamo, all located in Southwest Uganda. The NGOs that provided block grants were Africare and Integrated Community Based Initiatives (ICOBI).

Measurement: School-wide indicators, such as the number of secondary schools, the number of students who took the Year IV National Exam, and the proportion of students that failed the exam, were analyzed retrospectively. The main variable of interest was the percent failure rate of students who took the national exam in schools with and without block grant support (intervention vs control schools). The average failure rates for all students who took the exams, male students, and female students were also calculated. Graphs showing the exam failure rate for each year from 2001 to 2010, excluding 2009,
for both intervention and control schools were produced to assess patterns and trends. Data for 2009 was unavailable.

**Statistical Analysis**: Excel Data Analysis

**Results**: No statistically significant difference was found in the percent failure rates between control and intervention schools before and after implementation of the block grant support in 2006. However, for male students in 2001 and 2010, there was a statistically significant difference between the percent failure rates at control (6.9% in 2001; 3.3% in 2010) and intervention (11.2% in 2001; 2.2% in 2010) schools. Between genders in intervention schools, a statistically significant difference was found from 2002 to 2006, and 2010. In other words, the percent failure rates of female students were significantly higher than those of male students for those years. Unlike the quantitative analysis, qualitative analysis shows that the majority of stakeholders believe that the block grants benefited the school as a whole.

**Conclusion**: As there was no statistically significant difference in percent failure rates between control and intervention schools prior to when block grant support began in 2006, schools targeted by NGOs in 2006 seem to not have been “poor performing” schools. As there was no statistically significant difference in percent failure rates between control and intervention schools after 2006, block grant support seems to have made no significant impact at the school level. According to the qualitative data, the
majority of stakeholders interviewed expressed approval of block grants and believed that they benefited the school as a whole.
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<tr>
<th>Abbreviation</th>
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<tr>
<td>AVSI</td>
<td>Association of Volunteers in International Service</td>
</tr>
<tr>
<td>CBO</td>
<td>Community-based organization</td>
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<tr>
<td>CGHD</td>
<td>Center for Global Health and Development</td>
</tr>
<tr>
<td>CIA</td>
<td>Central Intelligence Agency</td>
</tr>
<tr>
<td>COPE</td>
<td>Community-Based Orphan-Care, Protection &amp; Empowerment</td>
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<td>DEOs</td>
<td>District Education Officers</td>
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<td>DGs</td>
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<td>EFA</td>
<td>Education For All</td>
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<td>GoU</td>
<td>Government of Uganda</td>
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<tr>
<td>HDI</td>
<td>Human Development Index</td>
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<tr>
<td>ICOBI</td>
<td>Integrated Community Based Initiatives</td>
</tr>
<tr>
<td>ICT</td>
<td>Information and communication technology</td>
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<tr>
<td>IDI</td>
<td>In-Depth Interview</td>
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<td>KCPE</td>
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<tr>
<td>MDGs</td>
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</tr>
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<td>NER</td>
<td>Net Enrollment Rate</td>
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<td>Non-governmental organizations</td>
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<tr>
<td>OECD</td>
<td>Organisation of Cooperation and Development</td>
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<td>OVC</td>
<td>Orphaned and Vulnerable Children</td>
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<tr>
<td>PEPFAR</td>
<td>President’s Emergency Plan for AIDS Relief</td>
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<td>UPE</td>
<td>Universal Primary Education</td>
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</table>
UPPET .................................................... Universal Post Primary Education and Training

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

USE .................................................................................................................................. Universal Secondary Education
INTRODUCTION

I. The Importance of Education in Developing Countries

Education is a basic human right that is entitled to everyone. It is more than attending school. It provides people with a future, a decent job and living, and better and healthier lifestyle (Rose, 2012). The importance of education is multifold: education helps maintain good health, relieves hunger and poverty, and stimulates economic growth and sustainability.

For example, the positive effects of education on health can be seen in the data available on how people’s knowledge of HIV can affect their health. In Uganda, studies concluded that educated women have a lower risk of becoming HIV positive and are more likely to use a condom during intercourse (de Walque, 2007). Furthermore, a prominent study indicated that of the 8.2 million child deaths under the age of 5 that were averted, 4.2 million of those were due to women of reproductive age attaining the appropriate education. The reduction in child mortality due to an increase in women’s education was evident especially in the sub-Saharan African countries (Gakidou et al., 2010).

In the 2012 Education For All (EFA) Global Monitoring Report, the importance of education is supported by the fact that attaining high quality education affects the rate of return to education- the percent increase in income for each year in school. Therefore, acquiring years of knowledge in school, the particular skills needed for a particular job, and problem solving and communication skills are extremely important (Rose, 2012).
One effect that declining education has had on countries is that those who are educated gauge more interest in international markets because of worsening quality of education and decreasing investments in education in their country of origin. For example, 60,000 professionals such as engineers, doctors, and professors have left Africa (Aredo & Zelalem, 1998). This further exacerbates the education system and stagnates the development of the country.

A. Education in Developing Countries

Initiatives to increase children’s access to primary education included the EFA movement that began in 1990. EFA’s main goal is to universalize free primary education. According to the Convention on the Rights of the Child established in 1989 and signed by leaders all over the world, free primary education should be provided to all children (Nishimura & Yamano, 2013). A minimum age of employment for children was also established (Heymann, Raub, & Cassola, 2013). As part of the EFA movement, most sub-Saharan African countries adopted the Universal Primary Education (UPE) policy, which established primary education as a basic human right.

Although an advantage of the UPE was that it increased enrollment in primary schools approximately threefold from 1997 to 2004, enrollment increased at a much faster pace than the recruitment of teachers and the improvement and enlargement of school facilities and infrastructure. The quantity of schools and teachers increased merely 41% as enrollment increased 171%. This led to overcrowded classrooms, inadequate faculty, exacerbated learning environments, and worsening quality of education (Chapman, Burton, & Werner, 2010). According to the 2012 EFA Global Monitoring
Report, 112 countries globally will need to recruit 5.4 million primary school teachers by 2015 to meet EFA goals.

There are advantages to attaining secondary education, which are observable in the positive correlation seen between completion of secondary education and an individual’s health, employment, and income (Lewin, 2005, p. 411), but many students disassociate themselves with the education system just after attaining primary education. According to the 2012 Global Monitoring Report, in low-income countries in 2010, the gross enrollment ratio for lower secondary schools was only 52%; which means that 52 out of 100 students who are of age to be in lower secondary schools are actually attending. This is primarily due to poverty and insufficient means to pay for school tuition. Also, the universalization of primary education increased enrollment in primary schools and increased competition in being admitted into secondary schools, which was exacerbated by the low number of existing secondary schools and limited seats available. For example, in Kenya, to limit the number of students enrolling in secondary schools, only students who pass the Kenya Certificate of Primary Education (KCPE) examination after primary schooling can do so (Ohba, 2011). Transition into secondary schools must be easily achievable because the possibility of gaining secondary education can motivate students to continue studying and successfully complete primary school.

II. Factors that Affect Educational Attainment in Africa

Factors that impact a child's education can take place at different levels: child, family, community, school, and national policies enacted by a country. By understanding
the different challenges present at each level, interventions can be proposed to improve educational attainment.

A. Child Level

a. Orphaned and Vulnerable Children (OVC)

According to UNICEF: Taking Evidence to Impact, an Orphan is defined as “a child under 18 years old whose mother died (maternal orphan), whose father died (paternal orphan), or whose parents both died (double orphan).” OVC is defined as “orphanhood, both single and double orphans, or the presence of a chronically ill adult in the household. National Plans of Action often extend OVC to include children in poor families, street children and children with disabilities, among others.” Since the 1990s, the number of orphans has been decreasing in Asia, Latin America, and the Caribbean; however, that number has increased by at least 50% in sub-Saharan Africa, mostly due to AIDS (UNICEF, 2006). Among the developing countries, those on the African continent have approximately 80% of the OVC who have lost one or both parents to AIDS (UNICEF, 2006).

Children of this status have difficulty due to health, social, and family issues. They are at risk economically, emotionally, and physically due to possible exposure to HIV, and a study in Uganda showed that orphaned children were more likely to be ill than non-orphans (UNICEF, 2006). Also, since OVC often have parents or caregivers who are affected by HIV, they often face discrimination and stigmatism from their peers resulting in being afraid of attending school (UNICEF, 2006).
Attainment of education is not easy for OVC also because they suffer from poverty and need to work due to sick parents. In 20 sub-Saharan African countries, it was found that orphaned children between the ages 10 and 14 were more likely to not attend school and work for at least 40 hours per week (UNAIDS, 2004). Older orphans are more prone to be exploited for labor or become exposed to HIV, which can interfere with their continuation of education (UNICEF, 2006). Also, studies in Kenya, Zambia, and Tanzania indicate that orphans are less likely to be at the right level of education (UNAIDS, 2004).

b. Health/Food/Nutrition

Due to lack of food and funding and without the proper nutrients and body conditions, children do not have the strength and energy to attend school and effectively utilize their bodies for educational purposes. In Tanzania, studies show that orphans were short for their age (Ainsworth et al., 2000). In Kenya, orphans were underweight (Lindblade, Odhiambo, Rosen, & DeCock, 2003). In suburban areas in Tanzania, orphans went to bed hungrier than non-orphans (Makame, Ani, & Grantham-McGregor, 2002).

c. Gender Differences

Females tend to be more at risk of early exploitation in many ways. Females are taken advantage of sexually, more likely to marry early, undergo child labor, and have their inheritance rights denied (UNAIDS, 2004). Within households, parents believe that males have higher returns to education than females, so they prioritize the male’s education over female’s (Nishimura & Yamano, 2013). Sometimes, female siblings will not attend school in order to support their male sibling’s education (Heymann et al.,
2013). As a result, abolishing tuition fees has benefited females more than males and reduced the gender enrollment gap (Nishimura & Yamano, 2013).

While males stay in school longer than their female counterparts, there are social pressures that result in males dropping out at the secondary level. According to the 2012 EFA Global Monitoring Report, fewer boys attended secondary schools than females, probably because of the usefulness of males in the labor market. The major reasons include poverty and an increase in labor demand for boys. A minor reason is boys’ inability to cope with their classroom environment, especially with the teacher’s manner and teaching approach (Rose, 2012). Also, boys usually remain unconcerned about education, so they drop out more easily and willingly (Republic of Uganda, 2010). Solutions recommended by the report include single-sex schools and dividing classes by academic performance (Rose, 2012).

B. Family level

a. Welfare

Wealthier households are more likely to place their children in schools than poorer households (UNICEF, 2006) and more likely to place children in private schools where there are fewer students, more qualified teachers, and a higher teacher to student ratio, compared to public schools (Nishimura & Yamano, 2013). For primary school, the 20% richest families spend 10 times as much on their children as the poorest 20% families (Rose, 2012). Also, studies have shown that the higher level of education that the head of household received, the more likely the child is to attend school (Fleisch, Shindler, & Perry, 2012). For already low income families, in addition to their inability to
pay the tuition, the poor quality of education due to increasing enrollment rates and high opportunity costs further serve as reasons not to enroll their child in school (Ohba, 2011).

Data show that students in poverty are more likely to drop out. In Uganda, studies show that, in 2006, 97% of the children from the highest wealthiest quintile enrolled in primary schools, and 80% reached the final grade in 2006; however, from the lowest quintile, 90% of the children enrolled with only 49% reaching the final grade in Uganda that same year (Rose, 2012).

Some children do not attend school in order to begin working and contributing to the household income. A study indicates that passing legislation on the minimum age of employment would affect children’s education in a positive way. Already, approximately 28% of countries worldwide either tolerate children at or under the age of 14 to be employed with parental consent, or have no legislation on the minimum age of employment. Among the countries that do have legislation regarding this issue, 88% of the countries allow 14 year olds to work. It is believed that increasing adults’ wages can reduce the pressure children feel to earn money and help children attain education (Heymann et al., 2013).

b. Relationship to Caregiver

It is commonly believed that non-orphans are more likely to attend school than orphans because most caregivers do not have enough money or are unwilling to educate orphans. The caregiver is more likely to place the orphan in school if the biological tie between the caregiver and the orphan is closer (UNICEF, 2006). For example, a recent
trend shows that orphans are relying more on their grandparents as their caregivers, even more than their living parent (Ardington & Leibbrandt, 2010).

C. Community Level

a. Location

At the community level, characteristics of the community and environment also affect children’s access to education. For example, urbanization helps improve children’s education. Usually better infrastructure, more qualified teachers, high returns to education, and lower cost per student due to high population are qualities of education in urban cities (Heymann et al., 2013). Also, in Ethiopia and Uganda, OVC tend to move to urban areas because HIV is more prevalent there, and there is less discrimination. Furthermore, widows tend to migrate to urban cities for better employment opportunities in order to afford raising their children (UNICEF, 2006). The school environment, if shaped by its history, could also affect children’s educational attainment. For example, the effects of apartheid can still be seen today in the historically Black or historically White and Indian schools that students are placed depending on the socioeconomic class of the student’s household. Compared to the middle and upper class students in historically White and Indian schools, poor students in historically Black schools do not have access to the proper equipment and cannot attain the appropriate knowledge and numeracy and literacy skills, which further stagnates the quality of education for these students (Spaull, 2013).

D. School Level

a. Poor Quality of Schools
UPE increased student enrollment in primary schools, but it reduced the quality of education. The rate of student enrollment increased too quickly compared to the rate at which teachers could be trained and recruited and the rate at which school infrastructure could be improved (Nishimura & Yamano, 2013). Sub-Saharan Africa needs to recruit at least 2 million teachers to achieve UPE. 1.1 million teachers were recruited in sub-Saharan Africa; however, the student to teacher ratio still increased from 42:1 to 43:1 due to high and fast student enrollment. Not only is recruitment needed, but also training programs that appropriately instruct teachers on how to educate children (Rose, 2012).

b. *Availability and Access to Public and Private Schools*

Since high-cost private schools offer elements such as better teachers and better student regulation that have proven to provide a more efficient education than public schools, wealthier families and students who are dissatisfied with the quality of education prefer private education. In public schools, the student to teacher ratio is usually around 60:1, while that at private schools is around 21:1. The number of private schools has been increasing. For example, in Kenya, the number of primary private schools increased fourfold from around 1,500 to 6,000 schools from 2002 to 2005, while the number of primary public schools increased approximately 1.6% from 2002 to 2005, with a range somewhere between 17,000 and 18,000 schools (Nishimura & Yamano, 2013).

c. *High Cost of Education*

Although UPE abolished tuition fees for primary education, the high cost of secondary education still prevents students from continuing their education. The cost for secondary education is high because there is a lack of funding from organizations. Ever
since the EFA placed much of the attention and focus on making primary education universal, most of the funding has been allocated to achieving this goal. For example, grants given to secondary schools from the Organisation of Cooperation and Development (OECD) decreased from around 9% to 6% during the 1990s (Lewin, 2005). Also, not all countries passed a policy abolishing tuition fees for secondary schooling.

d. Teaching Style

Teaching methods used by instructors in various African countries can also play a role in determining the quality of education. For example, Tanzania is known to use outdated and traditional ways of teaching, such as verbal memorization. Uganda, as well, uses a traditional model of teaching that does not explain how to relate learned concepts to real life situations and focuses on theoretical concepts. Botswana, Ghana, Nigeria, and Senegal all teach students through memorization rather than understanding and application, which could be what students need in order to achieve the quality of education that students receive in developed countries (Chisholm & Leyendecker, 2008).

e. Health of Teachers

Furthermore, schools need to be considerate of the health risks for teachers in areas with high HIV prevalence. With an already low teacher to student ratio, the deaths of teachers due to illnesses can further lower the quality of education (UNICEF, 2006).

E. National Policies

General policies have been passed in order to increase children’s access to education, particularly in Africa. The Millennium Development Goals (MDGs) and Dakar Goals (DGs) were developed in April 2000 in order to attain universal education
for both genders by 2015, with a focus on curriculum development (Chisholm & Leyendecker, 2008). These goals target the completion of primary school and achievement of gender equity in primary and secondary schools (Lewin & Little, 2011).

III. Educational Assistance

A. Donor Aid and Education

Many types of educational support, such as block grants and scholarships, are given to children, especially OVC, in Africa. Unlike scholarships, which are individual payments made directly to students or their caregivers for educational expenditures, block grants are sums of money that are given to educational institutions and systems. There are different types of block grants, and some donors allow recipient flexibility on how to spend the money while others have specific conditions and requirements.

An effective way to provide aid is collaboration between the state government and non-governmental organizations (NGOs), even though competition for donor funds and tension can result. According to a study, whether it is an NGO or a community-based organization (CBO), working with the government to come up with grants or a change in legislation results in long-term support for OVC (Rosenberg, Hartwig, & Merson, 2008). For example, the placement of children in foster care or adoption services occurs more smoothly with the assistance of the government. Other examples include global health funds, such as the Global Fund to Fight AIDS, Tuberculosis, and Malaria, and national trust funds, which are ways through which private organizations have provided funding through the government (Rose, 2012). For OVC in South Africa, it is required that they
receive a social grant from the government until the age of 14; however, the foster care system is so overburdened that most of the time this requirement is unmet. As a result, assistance from NGOs and international organizations is needed and useful because they help the government complete its task of providing grants to OVC. Other ways NGOs contribute is by providing training to caregivers and OVC, which increases awareness and community support and can lead to the training of OVC mentors and committees (Rosenberg, Hartwig, & Merson, 2008).

There are many other types of organizations that provide aid and funding in various forms. Faith-based organizations, such as Christian groups, provide assistance but might be reluctant to collaborate with other groups or the government because of the risk of not being able to spread religious teachings along with their assistance. For example, in Botswana, a faith-based group that provided counseling services expressed such concern (Rosenberg, Hartwig, & Merson, 2008). CBOs usually provide nonmonetary aid such as food baskets for families that are waiting for government grants (Rosenberg, Hartwig, & Merson, 2008). In Uganda, members of the community or others own and manage community schools, which make up 15% of primary schools. Private organizations own 11% of primary schools while the government aids 74% of the primary schools (Republic of Uganda, 2010). There are also academic institutions and international organizations such as the World Bank and the OECD that provide funding for education (Rosenberg, Hartwig, & Merson, 2008).

A main source of monetary funding is private organizations. Between 2008 and 2010, $50 billion out of $120 billion given as aid was from private organizations (Rose,
2012). However, around 53% went to health while merely 8% went to education. Private corporations and foundations have been donating approximately $683 million annually to developing countries. Information and communication technology (ICT) or energy companies usually donate the most money. However, these corporations donate to middle income countries such as Brazil, India, and China due to personal interest, usually business-related and for a short term with divided funding. The portion of the contributions that actually goes to accomplishing EFA goals or to countries that are the farthest from achieving EFA goals is very small. For example, out of the approximately $950 million that India donated to developing countries from 2008 to 2010, merely 2% was targeted towards education (Rose, 2012).

Government and donor funds also contribute to improving education. Government spending on education has risen over the past decades. For example, in Tanzania, the percentage of national income used to improve education has increased threefold with a significant increase in primary school enrollment. In 9 sub-Saharan African countries, donor funding makes up greater than ¼ of spending on education. For example, in Mozambique, the number of children not attending school decreased from 1.6 million in 1999 to less than 0.5 million in 2010, and, during these years, 42% of the amount spent on education was from donor funding. This increase in funding was mainly driven by the World Bank and International Monetary Fund in an effort to overcome the financial crisis that developing countries were experiencing.

From 2009 to 2010, most of the donations to education came from governments of various countries. Private organizations contributed largely as well (Rose, 2012).
Table 1. Donations from Governments & Private Organizations to Education, from 2009 to 2010

<table>
<thead>
<tr>
<th>Country</th>
<th>Donations from Governments to Education</th>
<th>Donations from Private Organizations to Education</th>
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<tbody>
<tr>
<td></td>
<td>Amount Donated (in millions)</td>
<td>Name of Organization</td>
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<tr>
<td>United Kingdom</td>
<td>$911</td>
<td>Open Society Foundations</td>
</tr>
<tr>
<td>United States</td>
<td>$888</td>
<td>Mastercard Foundation</td>
</tr>
<tr>
<td>Netherlands</td>
<td>$567</td>
<td>William and Flora Hewlett Foundation</td>
</tr>
<tr>
<td>Switzerland</td>
<td>$61</td>
<td>Ford Foundation</td>
</tr>
<tr>
<td>New Zealand</td>
<td>$59</td>
<td>Carnegie Corporation of New York</td>
</tr>
<tr>
<td>Finland</td>
<td>$52</td>
<td></td>
</tr>
<tr>
<td>Luxembourg</td>
<td>$36</td>
<td></td>
</tr>
</tbody>
</table>

B. Decreasing Donor Aid and Education

However, there are certain areas such as Central African Republic where not much of the national income has been allocated to education. The food and financial crises in low-income countries prevent much of the country’s income from being allocated towards improving education. Overall, donor contribution to countries in need has been decreasing. In 2010, aid from the United States towards education has stalled at around $13.5 billion, with $5.8 billion targeting basic education. Although $5.8 billion is twice the amount donated to basic education between 2002 and 2003, out of $5.8 billion, merely $1.9 billion targeted basic education in low-income countries. In 2010, there was an increase of just $14 million from the United States in aid for basic education in low-income countries. Much of the aid went to Afghanistan and Bangladesh between 2009 and 2010 (Rose, 2012).
Unfortunately, the future does not look positive in terms of donor contributions and meeting goals. According to the 2012 EFA Global Monitoring Report, improvement in education set by the DGs is slowing down, and most of the goals will not be met by 2015. Although the number of primary aged students in sub-Saharan Africa not attending school increased slightly from 29 to 31 million from 2008 to 2010, this increase was after a dramatic decrease from 42 million to 29 million from 1999 to 2004. 47 out of 100 students who are not in school are never expected to reenter. Gender disparity indicated by an unequal number of boys and girls was still prevalent in 17 countries by 2010.

Goals made as part of the EFA do not look like they will be met by 2015 either. Also, the goal made at the Group of 8 Gleneagles Summit in 2005, such as the goal for donors to increase U.S. aid by $50 billion from 2005 to 2010, did not occur. Sub-Saharan Africa was promised twice of what they actually received. In 2011, there was a 3% decrease in the total amount of aid given, which was the first decrease seen since 1997. Donors who previously played a huge role in improving education are not only lowering funding but also shifting their priorities. For example, in the previous decade, one of the major donors was the Netherlands. However, today, they do not view education as a main priority and are planning to reduce educational support by 60% between 2010 and 2015. Brazil, China, and India are new emerging donors, but their view of education as immediate priority is questionable (Rose, 2012).

C. Solutions

One solution to the decreasing trend seen in donor funds is utilizing the countries’ natural resources as a means to provide education to children. Natural resources may be
mismanaged, or the revenue that these resources bring in for countries has been used for military purposes. It has been observed that the attainment of education in countries with non-renewable natural resources, such as oil and minerals, is slower than countries with no or poor resources. For example, Nigeria has one of the greatest number of children not attending school in Africa, and it is one of the world’s largest oil and gas exporter. If the revenue from natural resources becomes government revenue and utilized to accomplish educational goals, then the EFA might be reached by 2015. For example, Botswana, one of the richest countries in sub-Saharan Africa, successfully utilized its wealth from diamonds for educational purposes. Botswana has attained not only UPE but also a secondary enrollment rate that is twice the average of that for the continent (Rose, 2012).

Due to tightening budgets and the stress of liability beginning to surface, donors are beginning to provide funding depending on the education progress report provided by the government of whichever country they are planning to give funding to. This adds more pressure on the government to successfully meet as many educational goals as possible. For example, for every additional student who passes a secondary exam, the United Kingdom rewards the Ethiopian Government with additional aid (Rose, 2012). In Uganda, the Government of Uganda (GoU) distributes the capitation grant to public primary schools depending on how many students remain in school. This is an incentive for schools to motivate students to continue attending schools. However, this grant can also become a reason for schools to keep students from moving up into the next grade (Mikiko Nishimura, 2008).
IV. Research Setting

My thesis will build upon the work of researchers at Boston University’s Center for Global Health and Development (CGHD) to better understand the impact of educational support on children attending secondary schools in Uganda (Bryant et al, 2011).

A. Country Background- Uganda

Uganda is located in East-Central Africa. It is west of Kenya and east of the Democratic Republic of the Congo. According to the World Factbook by the Central Intelligence Agency (CIA), the population was close to 35 million people and life expectancy at birth was 53.98 years in 2013. The World Bank website categorizes Uganda as a low-income country with 64.74% of the population living on less than $2 USD/day in 2009.

One of the key development indicators for Uganda is the Human Development Index (HDI). The HDI takes into account longevity, measured by life expectancy; knowledge, measured by education attainment; and income per capita. This value demonstrates how much creativity exists in people’s lives in order to fulfill their needs and interests, how many choices they have, and the factors that come into play when making those choices. From 1995 to 2007, Uganda’s HDI improved almost twofold from 0.272 to 0.514, mainly due to improvements in school enrollment and per-capita income. From 1990 to 2012, Uganda’s HDI improved from 0.306 to 0.456 and was one of the least developed countries that showed the most improvement compared to other countries in the world (Malik, 2013).
Uganda’s history of significant improvement in many aspects makes this country a good role model and an important country to observe. Uganda was noticeably successful compared to other African countries in fighting the HIV/AIDS epidemic. Among those between the ages 15 and 59, 14% were infected in the 1990s. Through successful effort in Uganda, in 2005, only 6.3% within the same age group were infected (de Walque, 2007). In addition, the implementation of UPE in 1997 in Uganda brought about many positive changes to the education system.

B. Education System in Uganda

Before UPE, the education system in Uganda was underfunded, with most of its resources coming from private organizations. Families were responsible for 80% of the total education cost for their children, and the government covered the rest. Most of the tuition costs went to teachers’ and administrators’ salaries rather than books and improving infrastructure and equipment. At first, with the implementation of UPE, the government covered tuition costs for a maximum of four children per family. However, that number increased to an unlimited number by 2003. Primary enrollment in Uganda increased dramatically from 2.8 million in 1997 to 7.6 million in 2004, and family spending on primary education was reduced by 60% from 1992 to 1999 (Mikiko Nishimura, 2008).

However, there were also some negative effects of UPE. For example, families were still in charge of providing for their children’s school uniforms, meals, books, classroom materials, and transportation fees. These hidden costs at times made it difficult for students to attend or continue attending schools. Also, delayed enrollment and
repetition continue to be problems in attaining appropriate education. Orphans and children where the head of the household is a female had the highest likelihood of delaying enrollment. To contrast, children in wealthy households, households with educated parents, or Muslim households had the lowest likelihood. In addition, even though donor funds from outside sources helped the number of primary school teachers, and the number of schools increased 41% from 1997 to 2004, the quality of education was at greater risk of worsening due to the 171% increase in enrollment from 1997 to 2004 (Mikiko Nishimura, 2008).

Ten years after the introduction of UPE, in 2007, Uganda became the first sub-Saharan African country to implement Universal Secondary Education (USE), a policy that eliminated tuition fees for secondary schools. USE was introduced for three reasons. First, the increase in primary school enrollment began accumulating pressure on the availability and quality of secondary schools. Second, Ugandans began to realize the importance of secondary education in order to develop their country in the future. Third, in order to become more competent in national and international systems, Uganda needed to improve its higher education systems (DeJaeghere, Williams, & Kyeyune, 2009). Although secondary school enrollment rate increased, completion rates for both genders still remain low (Republic of Uganda, 2010).

Following secondary education is tertiary education, which is at a university or other tertiary institution. Currently, there are 145 post-secondary institutions, and from 2000 to 2007, the total number of students enrolling in higher education institutions increased 14%. From 1993 to 2004, the female proportion out of the total student
enrollment for a university increased from 31% to 42%, and, since 1990, women have been highly favored for admission into universities or tertiary institutions (Republic of Uganda, 2010).

Key primary education indicators for Uganda can be seen in Table 2. According to the table, the primary school completion rate worsened dramatically. One of the MDGs is to increase it to 100% by 2015 (Republic of Uganda, 2010).

**Table 2: Indicators with Primary and Secondary Education Results**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Year</th>
<th>Primary Education Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Enrollment Rate (NER)</td>
<td>2000 → 2008</td>
<td>Increase 84 → 89 %</td>
</tr>
<tr>
<td>Male NER</td>
<td>2000 → 2006</td>
<td>Decrease 85 → 84 %</td>
</tr>
<tr>
<td>Female NER</td>
<td>2000 → 2006</td>
<td>Increase 84 → 85 %</td>
</tr>
<tr>
<td>Boys Completion Rate</td>
<td>2000 → 2008</td>
<td>Decrease 88.3 → 27 %</td>
</tr>
<tr>
<td>Girls Completion Rate</td>
<td>2000 → 2008</td>
<td>Decrease 88.5 → 26 %</td>
</tr>
<tr>
<td>Primary School Completion Rate</td>
<td>2000 → 2008</td>
<td>Decrease 88.4 → 26 %</td>
</tr>
</tbody>
</table>

Key indicators for secondary education include enrollment, number of secondary schools and teachers, student teacher ratio, gross enrollment rate, and NER. After USE and Universal Post Primary Education and Training (UPPET) were implemented, NER for secondary education increased from 15.4% in 2005 to 21.3% in 2007. Boys usually enroll in secondary school more than girls, and the completion rate for secondary school is lower than primary school, mainly due to the cost of education. For boys, the completion rate has been around 28% and 22% for girls (Republic of Uganda, 2010).

**C. Block Grant Programs in Uganda**

Various educational support programs have been implemented throughout Uganda. This thesis will further investigate the impact of recent educational support
made to selected secondary schools by the U.S. Government that have been studied by Boston University researchers.

Through the President’s Emergency Plan for AIDS Relief (PEPFAR), the United States Agency for International Development (USAID) funded 3 NGOs to provide block grants and scholarships to help the educational attainment of OVC attending secondary schools in Uganda. These programs started in 2006 and ended in 2011. The two block grants were from Africare and ICOBI, and the scholarship was from the Association of Volunteers in International Service (AVSI). Africare and ICOBI differ in their approach to support OVC. Africare tried to provide economic support to households, such as by finding ways to raise caregivers’ income, developing the workforce for OVC, and strengthening OVC committees that are made to support OVC. ICOBI adopted an approach that was focused on strengthening family connections, such as by educating caregivers, household members, and OVC on legal protections, giving them psychosocial assessments, and connecting them with community care committees. AVSI is a faith-based group that utilized a holistic approach by trying to provide all possible support to OVC households. Both Africare and ICOBI provided block grants to schools and individual support to OVC; however, the main difference was that Africare placed conditions and limitations on how schools could spend their block grant funding while ICOBI allowed some flexibility on spending decisions. AVSI’s form of support was more similar to scholarships because funds were distributed to individual students and families (Bryant et al., 2011).
Initial evaluation results focused on student-level outcomes such as attendance, pass rates, and exam scores. Having calculated the mean of all absenteeism rates from all three NGOs, supported OVC had lower absenteeism rates (3.6%) than non-supported OVC (6.8%) and non OVC (5.1%). Also, males were more likely to be absent than girls in all three categories: supported OVC, non-supported OVC, and non-OVC. In terms of national exam scores, not much difference in Year IV national exam pass rates was seen among supported OVC (67.1%), non-supported OVC (59.1%), and non-OVC (64.9%).

In terms of financial expenditure, the total cost per child for Africare came out to $343; AVSI, $412; and ICOBI, $305. The average cost per child per year for block grants was $324 in Uganda, and $412 for scholarships. Since it costs more to enroll in the scholarship program than the block grant programs and not much difference was seen in each approach’s ability to generate educational outcomes, it was concluded that block grants were more cost effective than scholarships. However, once the number of students begins decreasing, the effectiveness of block grants also decreased due to a lowered shift in economies of scale and less leverage on the school to properly and most effectively distribute the funds (Bryant et al., 2011).

There are positive and negative aspects to block grants. Headmasters stated that weaknesses included delay in payments being made to the school and the school’s top priorities being ignored, especially for those schools supported by Africare, since this NGO placed more limitations on how its funds could be spent. However, reasons to use block grants include: cost effectiveness, easier administration, and less supervision necessary to ensure that the funding goes to the rightful recipient. According to
headmasters, block grants reduced the stress that came from having to collect school fees from families. Also, the large sum made planning easier. Headmasters also liked block grants because they believed that this kind of support can benefit all students, both OVC and non-OVC students (Bryant et al., 2011).

**D. The Goal of this Thesis**

The goal of this thesis is to better understand how block grants affect school level outcomes. Initial analyses focused on student-level outcomes. However, it is important to know whether block grant support – educational support given to schools – has the ability to improve student educational achievement within the entire student population. In this thesis, indicators at the school level will be analyzed over time, including the total number of schools, the number of students who took the Year IV secondary school national exam, and the proportion of students that failed the exam between schools receiving block grant support versus schools without any support. Recent studies have shown that the block grant programs in Uganda can improve the educational attainment among OVC to levels that are comparable to non-OVC students. This thesis will explore the impact of block grants in Uganda with the school as the primary unit of analysis to determine if block grants benefit a particular group of students, such as OVC, or if they can improve the education received by all students within supported schools.
METHODS

The data analyzed for this thesis came in two forms: quantitative and qualitative. Data were collected as part of an OVC study conducted by the Boston University Center for Global Health and Development from 2009 to 2012.

A. Quantitative Analysis

The quantitative data came from a national database from the Ugandan Ministry of Education. In the quantitative analysis, patterns and trends associated with the proportion of students who took the Year IV secondary school national exam and failed were analyzed. The Year IV exam is an important indicator because it is the national exam at the end of a four-year secondary school in Uganda and is a good measure of a student’s educational achievement. It covers a range of quantitative and qualitative subjects, including, English, math, and science, and because it is a national exam, grading and scoring is standardized, so comparisons of students from different school can be made over time.

Although the national database contains educational information found throughout the entire country, data were analyzed within districts of Uganda where block grant support was provided to select secondary schools. The three districts that were part of the analysis were from the southwest region of the country and include: Isingiro, Mbarara, and Ntungamo.
Block grants were provided by two separate NGOs that were operating in these districts:

1. ICOBI supported schools in Mbarara. ICOBI provided a lump sum of money to schools, which covered the financial needs of the children selected to receive support from ICOBI. Approximately 60% of the support given to schools was limited to the direct support of students, such as purchasing their textbooks, and to infrastructure and institutional improvement, which could include computers, school desks and furniture, solar panels, and others. The remaining 40% of the support was left for the schools to decide where they wanted to use the funds. It could be used to feed students, increase teacher wages, or create orphan organizations. The child being supported was promised secondary school education for the entire academic year with no extra charges. ICOBI also provided individual support to OVC through the purchase of pens, uniforms, sanitary pads for females, and others. The total cost per child per year for ICOBI came out to $305 USD.

2. Africare supported schools in Ntungamo and Isingiro. Africare provided a lump sum of money to schools, restricting its use to physical renovations, such as purchasing additional desks, class materials, and others. Africare also provided individual support to OVC through the purchase of pens, uniforms, sanitary pads for females, and others. Anti-AIDS youth groups called Community-Based Orphan-Care, Protection & Empowerment (COPE) clubs formed within schools for additional support for OVC. The total cost per child per year for Africare came out to $343 USD.
The Year IV national examination failure rates, which were available from years 2001 to 2008 and 2010 (unfortunately, 2009 data is missing), were analyzed to determine the effects of block grants on school level outcomes. Since block grant support started in 2006, comparison of the trend in failure rates prior to and after 2006 in intervention and control schools would determine whether or not block grants had a positive or negative effect at the school level.

Indicators at the school level included:

1. The total number of schools
2. Total number of students enrolled who took the national exam
3. The national exam failure rates

Schools were divided between those that received block grant support (intervention schools) and schools that did not receive any support (control schools). Control and intervention schools were determined according to a list provided by researchers in the field showing which schools received block grant support. Calculations for the average failure rates for male and female students who took the exam in control and intervention schools were done for each year. After determining the total exam failure rates, time-series graphs with x-axis as time and y-axis as failure rates were created using Excel to compare patterns and trends in both control and intervention schools and to see if differences exist between gender. For further information on the specific types of comparisons done and the procedures for each comparison, refer to ‘Appendix A.’
B. Qualitative Analysis

The qualitative data came from interviews conducted by the CGHD research team. Interviewees included lead staff of each NGO, school headmasters, and the district education officers (DEOs). Using content analysis, transcripts from the various interviews were read to identify key recurrent themes and to compare the strengths and weaknesses of block grant support programs, as stated by the stakeholders.
RESULTS

I. Quantitative Results:

Block grants were provided by NGOs starting in 2006. Schools labeled as ‘intervention schools” prior to 2006 are schools that were chosen to receive block grants starting in 2006 and onward.

(1) The number of secondary schools in 3 districts of Southwest Uganda from 2001 to 2008, and 2010.

According to Figure 1, the total number of secondary schools increased for both control and intervention schools over the years. The increase in intervention schools is slower than that for the control schools. Control schools increased by 122.9% from 2001 to 2010. Prior to 2006 when block grants were distributed, the number of intervention schools increased by 56.0% from 2001 to 2006, while the number increased by 10.3% from 2006 to 2010. After the block grant support began, the percent increase in the number of intervention schools decreased approximately fivefold.
(2) The number of enrolled secondary school students who took the Form IV national exam

According to Figure 2, the number of students who took the exam increased in control schools from 2001 to 2010, while that in intervention schools increased from 2001 to 2004, decreased from 2004 to 2005, and increased from 2005 to 2010. The number of students who took the exam was greater in control schools than intervention schools each year; this is expected as there are more control schools and hence more students taking exams.
According to Figure 3 and 4, the number of male and female students who took the exam increased in control schools from 2001 to 2010, except for a slight decrease in the number of female students from 2005 to 2006. The number of male and female students who took the exam in intervention schools increased from 2001 to 2004 but decreased from 2004 to 2006 for males and from 2004 to 2005 for females. It then increased from 2006 to 2010 after the block grant program began in 2006 for males, but for females it increased from 2005 to 2007, decreased slightly from 2007 to 2008, and increased from 2008 to 2010. The number of male and female students who took the exam was greater in control schools than intervention schools each year but this is expected as there are more control schools and hence more students taking exams.
Figure 3: Number of Male Students Who Took the National Exam

Figure 4: Number of Female Students Who Took the National Exam
(3) Percent Failure Rates of Students who took the exam

According to Table 3 and Figure 5, the average percent failure rates of students who took the exam decreased in control school from 2001 to 2006, increased from 2006 to 2007, decreased from 2007 to 2008, and increased from 2008 to 2010. The percent failure rates of students who took the exam in intervention schools decreased from 2001 to 2008 but increased from 2008 to 2010. A p-value < 0.05 indicates that a statistically significant difference exists between the percent failure rates in control schools and those in intervention schools. However, the p-values for each year was > 0.05, indicating that there is no statistically significant difference between the percent failure rates in control and intervention schools from 2001 to 2010.

Table 3: Percent Failure Rates and Number of Students Who Took the National Exam in Control and Intervention Schools from 2001 to 2008, and 2010

<table>
<thead>
<tr>
<th>Year</th>
<th>Control</th>
<th>Intervention</th>
<th>p-value*</th>
<th>Control</th>
<th>Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>10.4</td>
<td>14.3</td>
<td>0.10</td>
<td>2464</td>
<td>1954</td>
</tr>
<tr>
<td>2002</td>
<td>12.8</td>
<td>13.7</td>
<td>0.44</td>
<td>3013</td>
<td>2323</td>
</tr>
<tr>
<td>2003</td>
<td>7.6</td>
<td>8.8</td>
<td>0.70</td>
<td>3205</td>
<td>2760</td>
</tr>
<tr>
<td>2004</td>
<td>7.4</td>
<td>8.6</td>
<td>0.70</td>
<td>3785</td>
<td>3134</td>
</tr>
<tr>
<td>2005</td>
<td>6.0</td>
<td>7.6</td>
<td>0.31</td>
<td>4202</td>
<td>2951</td>
</tr>
<tr>
<td>2006</td>
<td>3.6</td>
<td>4.9</td>
<td>0.54</td>
<td>4350</td>
<td>3022</td>
</tr>
<tr>
<td>2007</td>
<td>3.7</td>
<td>3.5</td>
<td>0.89</td>
<td>4897</td>
<td>3234</td>
</tr>
<tr>
<td>2008</td>
<td>2.3</td>
<td>2.5</td>
<td>0.81</td>
<td>5099</td>
<td>3263</td>
</tr>
<tr>
<td>2009</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2010</td>
<td>3.8</td>
<td>3.1</td>
<td>0.14</td>
<td>7092</td>
<td>4274</td>
</tr>
</tbody>
</table>

*Significantly different if p < 0.05
According to Table 4, 5 and Figure 6, 7, the failure rate of male and female students who took the exam in control schools increased from 2001 to 2002. For male students alone, it decreased from 2002 to 2008 and increased from 2008 to 2010. For female students alone, it decreased from 2002 to 2006, increased from 2006 to 2007, decreased from 2007 to 2008, and increased from 2008 to 2010. Prior to the implementation of the block grant program in 2006, the failure rates of male students who took the exam in intervention schools decreased from 2001 to 2006, while those for females increased from 2001 to 2002 and decreased from 2002 to 2006. Following the implementation of the block grant program in 2006, the failure rates of male students in intervention schools continued to decrease, while that for females decreased from 2006 to 2008, and increased from 2008 to 2010. A p-value < 0.05 indicates that a statistically
significant difference exists between the percent failure rates in control schools and those in intervention schools. For males, in the year 2001 and 2010, the p-values of 0.04 and 0.02 respectively, indicate that there is a statistically significant difference between the percent failure rates in control and intervention schools. The difference in the male percent failure rates for the years 2001 and 2010 was not due to chance. However, for females, the p-values for each year was > 0.05, indicating that there is no statistically significant difference between the percent failure rates in control and intervention schools from 2001 to 2010.

**Table 4: Percent Failure Rates and Number of Male Students Who Took the National Exam in Control and Intervention Schools from 2001 to 2008, and 2010**

<table>
<thead>
<tr>
<th>Year</th>
<th>Male Percent Failure Rates</th>
<th>Number of Male Students who took the exam</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Control</td>
<td>Intervention</td>
</tr>
<tr>
<td>2001</td>
<td>6.9</td>
<td>11.2</td>
</tr>
<tr>
<td>2002</td>
<td>9.2</td>
<td>9.3</td>
</tr>
<tr>
<td>2003</td>
<td>5.3</td>
<td>6.1</td>
</tr>
<tr>
<td>2004</td>
<td>5.1</td>
<td>5.8</td>
</tr>
<tr>
<td>2005</td>
<td>4.3</td>
<td>5.5</td>
</tr>
<tr>
<td>2006</td>
<td>3.1</td>
<td>3.3</td>
</tr>
<tr>
<td>2007</td>
<td>2.6</td>
<td>3</td>
</tr>
<tr>
<td>2008</td>
<td>1.6</td>
<td>2.3</td>
</tr>
<tr>
<td>2009</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2010</td>
<td>3.3</td>
<td>2.2</td>
</tr>
</tbody>
</table>

*Significantly different if p < 0.05
Table 5: Percent Failure Rates and Number of Female Students Who Took the National Exam in Control and Intervention Schools from 2001 to 2008, and 2010

<table>
<thead>
<tr>
<th>Year</th>
<th>Female Percent Failure Rates</th>
<th>Number of Female Students who took the exam</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Control</td>
<td>Intervention</td>
</tr>
<tr>
<td>2001</td>
<td>15.6</td>
<td>18.2</td>
</tr>
<tr>
<td>2002</td>
<td>17.6</td>
<td>18.5</td>
</tr>
<tr>
<td>2003</td>
<td>10.6</td>
<td>12.1</td>
</tr>
<tr>
<td>2004</td>
<td>10.2</td>
<td>11.6</td>
</tr>
<tr>
<td>2005</td>
<td>8.1</td>
<td>10.1</td>
</tr>
<tr>
<td>2006</td>
<td>4.3</td>
<td>6.8</td>
</tr>
<tr>
<td>2007</td>
<td>5.1</td>
<td>4</td>
</tr>
<tr>
<td>2008</td>
<td>3.1</td>
<td>2.8</td>
</tr>
<tr>
<td>2009</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2010</td>
<td>4.3</td>
<td>4.1</td>
</tr>
</tbody>
</table>

*Significantly different if p < 0.05
According to Table 6 and Figure 8, in intervention schools prior to 2006, percent failure rates of female students were continuously higher than those of male students.

From 2001 to 2006, the percent failure rates of female students decreased 62.6% and those of male students decreased 70.5%. After 2006, the percent failure rates of female students were continuously higher than those of male students each year. In 2008, the difference between the percent failure rates of females and those of males was the smallest, a difference of 0.5%. From 2006 to 2010, the percent failure rates of female students decreased 39.7% and those of male students decreased 33.3%. A p-value < 0.05 indicates that there is a statistically significant difference between percent failure rates of male students in intervention schools and those of female students. The p-values for 2002 to 2006, and 2010 were below 0.05, indicating that there is a statistically significant
difference between the percent failure rates of male students in intervention schools and those of female students. In other words, the difference in the percent failure rates in intervention schools between males and females for these years was not due to chance.

Table 6: Percent Failure Rates in Intervention Schools by Gender

<table>
<thead>
<tr>
<th>Year</th>
<th>Percent Failure Rates in Intervention Schools</th>
<th>p-value*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>2001</td>
<td>11.2</td>
<td>18.2</td>
</tr>
<tr>
<td>2002</td>
<td>9.3</td>
<td>18.5</td>
</tr>
<tr>
<td>2003</td>
<td>6.1</td>
<td>12.1</td>
</tr>
<tr>
<td>2004</td>
<td>5.8</td>
<td>11.6</td>
</tr>
<tr>
<td>2005</td>
<td>5.5</td>
<td>10.1</td>
</tr>
<tr>
<td>2006</td>
<td>3.3</td>
<td>6.8</td>
</tr>
<tr>
<td>2007</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2008</td>
<td>2.3</td>
<td>2.8</td>
</tr>
<tr>
<td>2009</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2010</td>
<td>2.2</td>
<td>4.1</td>
</tr>
</tbody>
</table>

*Significantly different if p < 0.05

Figure 8: Percent Failure Rates in Intervention Schools by Gender

Start of block grant support for selected secondary schools
II. Qualitative Results:

A total of 25 in-depth interviews from secondary school headmasters, DEOs, and NGO representatives were included as part of this thesis project (refer to Table 7).

Table 7: Summary of In-Depth Interviews (IDIs)

<table>
<thead>
<tr>
<th>Gender</th>
<th>Headmasters (IDI)</th>
<th>District Education Officers (IDI)</th>
<th>NGO Reps. (IDI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>17</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Female</td>
<td>4</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>21</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

Overall, the great majority (23/25) of stakeholders interviewed had favorable impressions of the educational block grant program. A small number (2/25) of stakeholders stated that block grants did not benefit the school as a whole as they believed that these grants do not affect overall school attendance.

The majority of headmasters (19/21) who supported block grants believed that it led to increased student enrollment, better academic performance, and improved schools’ reputation and appearance by building and improving facilities, such as installing solar power. In addition, the appearance of desks changed the way the school was viewed by others, and the school seemed more attractive due to better infrastructure and facilities. As a result, headmasters believed that enrollment increased after support was provided. They also agreed that it helped the school pay back its debt. The majority of headmasters thought the greatest strength of block grant program was that it was provided in a lump sum, so large debts that the school had could be cleared easily. Furthermore, restrictions and strict management limited the use of block grants and helped the school focus on
students’ education. The headmasters who did not support block grants (2/21) believed that block grants did not attract more students and did not improve attendance. The greatest weakness mentioned by the majority of headmasters was delay in payments.

All the DEOs (2/2) interviewed agreed that block grant support was valuable and attendance rates have been more consistent since the support began. Similar response was seen with the NGO representatives who believed that block grant support benefited both OVC and the school as a whole. All NGO representatives (2/2) mentioned that block grants improved school infrastructure and facilities, and provided more materials, which benefited the school as a whole. For example, funding provided enough lighting and laboratory equipment and dormitories, which they believed increased enrollment. Some of the weaknesses of the block grant program included not enough coverage of exam fees and lunches for OVC. As a result, many OVC students could not take the exam or had to remain hungry during lunch period. All NGO representatives mentioned that block grants improved OVC’s academic performance. They also agreed that early distribution of block grants was its greatest strength because it allowed schools to plan better.
Table 8: Strengths and Weaknesses of Block Grants, according to Headmasters, DEO, and NGO Representatives

<table>
<thead>
<tr>
<th>Strengths of block grants</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Theme #1: Increased enrollment/ More student attraction</strong></td>
</tr>
<tr>
<td>“Yes it has made differences, the drop out rate is low and their attendance is more regular”</td>
</tr>
<tr>
<td><strong>Theme #2: Better school reputation</strong></td>
</tr>
<tr>
<td>“able to uplift the face of the buildings, installed solar power, the school reputation has also improved”</td>
</tr>
<tr>
<td><strong>Theme #3: Better academic performance</strong></td>
</tr>
<tr>
<td>“It has improved the general welfare of the students as well as their academics.”</td>
</tr>
<tr>
<td><strong>Theme #4: Reduced debt/ Increased school budget</strong></td>
</tr>
<tr>
<td>“Has helped to boost the economic status of the school”</td>
</tr>
<tr>
<td><strong>Theme #5: Better school appearance</strong></td>
</tr>
<tr>
<td>“more materials. Desks changed the appearance of classrooms”</td>
</tr>
<tr>
<td><strong>Theme #6: Better infrastructure and equipment</strong></td>
</tr>
<tr>
<td>“There were better performance as they had enough text books, enough lighting equipment… these materials/infrastructure are there to stay”</td>
</tr>
<tr>
<td><strong>Theme #7: Lump sum</strong></td>
</tr>
<tr>
<td>“It comes in a lump sum so in case of a debt of 1million, we can easily clear it”</td>
</tr>
<tr>
<td><strong>Theme #8: Restricted to Development/ Strict Management</strong></td>
</tr>
<tr>
<td>“No room for diversion or mismanagement of funds”</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Weaknesses of block grants</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Theme #1: No effect on attendance</strong></td>
</tr>
<tr>
<td>“no general correlation between ICOBI money and attendance. If a child has a poor background, you can’t just change it with fees, other factors influence attendance although we can’t rule out the fact that they have an opportunity of regular attendance”</td>
</tr>
<tr>
<td><strong>Theme #2: Delay in payment</strong></td>
</tr>
<tr>
<td>“ICOBI monies come at odd times. Like now it is almost end of term but ICOBI has not yet cleared children’s fees”</td>
</tr>
<tr>
<td><strong>Theme #3: Does not cover everything</strong></td>
</tr>
<tr>
<td>“Examinations fees would not be catered for so some could fail to sit for exams and then the percentage covered on tuition was not that high. Not able to support children beyond S.4”</td>
</tr>
</tbody>
</table>
DISCUSSION

I. Thesis goals / research questions

   a. Do block grants help secondary schools?

   We know that recently published articles show that vulnerable students, such as OVC, who are provided educational support from these block grant programs, are able to improve their educational outcomes to the levels comparable to the non-OVC students (Shann et al., 2013; Brooks et al., 2013). One would assume that block grants – with resources given to the entire school – could also benefit the entire student population in secondary schools that received support. Preliminary findings from this thesis would seem to indicate that the school-level impact of block grant support is limited.

II. Synthesis of your findings

   a. Number of Schools and Number of Students Who Took the Exam

   According to Figure 1, the total number of secondary schools in this study increased before and after 2006 for both control and intervention schools. However, the increase from 2008 to 2010 was less dramatic for intervention schools than for control schools. One possible explanation is the insufficient amount of block grants available each year, so the number of schools that received support remained the same. NGOs providing block grant support have limited funding and, as a result, can only commit to supporting a select number of secondary schools.
According to Figure 2, the number of students who took the exam increased in control schools prior to and after the start of block grant support in 2006. For intervention schools, prior to 2006, the number of students increased with a sudden decrease from 2004 to 2005. However, after administering block grants to intervention schools from 2006 and onward, there was a consistent increase in the number of students who took the exam. For example, a sudden increase of more than 1000 students who took the exam in intervention schools can be seen from 2008 to 2010. One possible reason for the increase in the number of students who took the exam after 2006 is an increase in secondary school enrollment rate, which occurred after the introduction of USE in 2007 in Uganda. In addition, according to interviews with stakeholders, it was believed that the school became more attractive if it received support, which could lead to an increase in enrollment rate. An increase in students attending school is one possible explanation for the increase in the number of students who took the exam.

b. Percent Failure Rates of Students Who Took the Exam

When analyzing the overall changes from 2001 to 2010 in the percent failure rates of students who took the exam, it is an impressive drop. For example, in control schools, percent failure rates decreased from 10.4% in 2001 to 3.8% in 2010. In intervention schools, percent failure rates decreased from 14.3% in 2001 to 3.1% in 2010. In the period of time before block grant support started in 2006, the intervention schools had a slightly higher percentage of students who failed the Form IV national exam than control schools. Therefore, it would appear that the block grants were targeted to “poor-performing” schools; however, there was no statistically significant difference between
the percent failure rates of students in control schools and the percent failure rates of students in intervention schools. This means that overall school performance, as measured by the percent failure rate, was the same in both control and intervention schools. The percent failure rates in the years after block grant support began shows almost identical values. Likewise, the difference was not statistically significant so the proportion of students that failed the exam was essentially the same between control and intervention schools after 2006. As there is no difference before and after block grant support began, block grant support seems to have had no impact on percent failure rates between the control and intervention groups. Interestingly, from 2008 to 2010, there was a 24.0% increase in percent failure rates in intervention schools. A possible contributing factor for this dramatic increase within two years could be the 1000 increase in the number of students who took the exam in intervention schools and if many of these students who took the exam in 2010 were less prepared.

c. Percent Failure Rates in Intervention Schools By Gender

When analyzing the overall changes from 2001 to 2010 in the percent failure rates of male and female students who took the exam, it is an impressive drop. For example, in control schools, percent failure rates of male students who took the exam decreased from 6.9% in 2001 to 3.3% in 2010, while those for female students decreased from 15.6% in 2001 to 4.3% in 2010. In intervention schools, the percent failure rates of males decreased from 11.2% in 2001 to 2.2% in 2010, while those for females dropped from 18.2% in 2001 to 4.1% in 2010. In the period of time before block grant support started in 2006, the intervention schools had a slightly higher percentage of male and female
students who failed the Form IV national exam than control schools. Therefore, it would appear that the block grants targeted schools that had “poor-performing” male and female students; however, there was no statistically significant difference between the percent failure rates of male in control schools and intervention schools, other than in 2001 and 2010. There was also no statistically significant difference between the percent failure rates of female students in control schools and intervention schools. For the years in which no statistically significant difference was found, overall school performance, as measured by the percent failure rate, was the same in both control and intervention schools, and block grant support had no impact on percent failure rates between the control and intervention groups. However, for male students, in 2001 and 2010, the p-value was less than 0.05, which indicate that the difference between the percent failure rates of male students in control schools and those in intervention schools was not due to chance. In addition, it can be seen that the percent failure rates of male students in intervention schools in the years after block grant support are higher than those in control schools, except in 2010 when the percent failure rates of male students is for the first time lower in intervention schools than control schools. Since 2010 is after block grant support began in 2006, the reason for this trend in 2010 could appear to be the positive impact block grant support had on students’ educational attainment in intervention schools. However, since this new trend is seen only in one time point, in 2010, there could be other factors that resulted in this particular finding. More research that looks into other indicators beyond percent failure rates will need to be conducted.
In addition, before 2006, female students had a higher percent failure rates than male students each year. Even after block grant support began in 2006, percent failure rates of females were still greater than those of males. This further supports a recently published article that showed girls being much less likely to pass the national examination in secondary schools than boys, despite the fact that no significant difference was found in absenteeism and drop out rates between the two genders (Brooks et al., 2013). Before the start of block grant support in 2006, the percent failure rates of females in intervention schools was about twice those of males each year. But, after the start of block grant support in 2006, the percent failure rates of male students and those of female students were almost identical values each year and reached equilibrium. After block grant support began in 2006, the difference between the percent failure rates of male students and those of female students was statistically significant only in 2010. However, considering the finding that there was no statistically significant difference between the percent failure rates of all students in control and intervention schools (Table 3), the statistically significant difference found in 2010 for the comparison between genders might not be due to block grants. In addition, according to Tables 4 and 5, percent failure rate was significant for males and not females in 2010. Since a small statistically significant difference was found between male students in control and intervention schools in 2010, it seems like block grants were finally working and that males were seeing more benefit from this program. However, since a statistically significant difference was not observed in the other years during the block grant support (2006-
2008), more research would need to be conducted in order to explore if there were differential benefits between male and female students.

d. Interviews of Stakeholders

According to the qualitative data, the majority of stakeholders interviewed expressed approval of block grants and believed that they benefited the school as a whole. Almost all the stakeholders (23/25) supported educational block grants while a few (2/25) did not. The majority of those interviewed mentioned increased enrollment as one of the strengths of block grants; however, increased enrollment is most likely a result of the implementation of the USE policy in 2007. Another strength stated by the stakeholders was better academic performance. Considering the findings of this thesis, there seems to be a disconnection between what the stakeholders are mentioning and the results from the quantitative analysis. Such positive response from the stakeholders could be their attempt to highlight the strengths and benefits of block grant support to the research team in order to continue receiving block grant support. Stakeholders mentioned receiving the block grant support in a large sum as one of the strengths because it helped pay off debts or improve facilities and infrastructure to improve the school’s reputation. Therefore, emphasizing the positive effects of block grant support to donors could have been the stakeholders’ objective resulting in this biased response. As stated before, the quantitative analysis indicates that block grant support made no impact at the school level. Possible explanations for the results seen in our quantitative analysis are stated in ‘Recommendations’ below.
III. Limitations

a. Our data available from the Ministry of Education to understand the effect of block grants on school level outcomes was limited to the percent failure rates of students who took the exam from 2001 and 2008, and 2010. Final exams are usually a good proxy for overall educational attainment; however, it may not be able to paint a perfect picture of educational achievement at the school level. In other words, the academic performance of the students who did not take the exam cannot be assessed. For example, if the selection of students who took the exam was not random and the brightest and well-off students were selected to take the exam, selection bias may be one reason no statistically significant difference was found between percent failure rates of male and female students in control and intervention schools. To successfully measure the impact of block grants on schools, other indicators need to be taken into account so that performance can be assessed regardless of whether or not the student took the exam.

b. The study population was secondary schools in 3 districts in Southwest Uganda: Isingiro, Mbarara, and Ntungamo. These are mostly rural areas with people of low socioeconomic status. Results seem to indicate that the block grant support was ineffective in this setting. However, the story might be different if these were schools in urban settings.

IV. Recommendations

a. Possible Explanations for Outcome:
Current block grant support in these 3 districts did not show improvement in school level outcome as measured by percent failure rates. Targeting a general cause for the failure on an exam is extremely difficult because school conditions cannot be standardized, so the same reason cannot be applied to all schools. Also, factors that can affect a students’ educational attainment, such as the effect of better desks or light equipment, the quality of teachers, and the attention span of each child in class, cannot be quantified into measurable values, in the same way percent failure rates can be. Therefore, comparing the possible causes for the result obtained in our quantitative analysis is difficult, and researchers are limited to interviews and qualitative data available in determining the impact these factors had on students’ educational attainment.

Nevertheless, possible reasons do exist. One explanation for the result seen in the quantitative analysis could be an insufficient amount of educational support. Africare spent an average cost of $343/child while ICOBI spent $305/child for each OVC student enrolled in supported secondary schools (Bryant et al., 2011). This amount of money could have been too small to make a significant difference at the school level in a low socioeconomic setting. One weakness mentioned by stakeholders was that the block grant did not cover everything, and some students could not sit for exams because they could not cover the examination fees. If students who were able to afford the exams were those who were not best prepared, then this can lead to an increase in failure rates.

Another explanation that can explain the quantitative analysis result is inadequate or poor preparation of students for the national exam. Money available to these schools to purchase appropriate and adequate resources, such as books, to prepare for these exams
might have varied depending on how block grant distributors determined the amount of funding that would be provided to these schools, such as by counting the number of OVC at that particular school. Also, teachers might not have been trained well enough to teach students the necessary materials to pass the national exam. The improvement in academic performance seen by stakeholders could have been an improvement in grades achieved by students on school quizzes and exams. School quizzes and exams, if prepared by the teachers themselves, can be subjected to changes made by the teachers depending on the students’ level of knowledge and competency. On the other hand, the national exams are standardized, and all students, regardless of the kind of teachers and programs available at school, are given the same exam. Therefore, the national exams could have been more challenging and difficult than expected.

Another possible explanation could be inappropriate usage of block grants. Although a strength mentioned by stakeholders was the strict management of block grants, there is some flexibility on how these funds were used at various schools. For example, some schools used the funds from block grant support to reduce school debt as revealed through the qualitative interviews. This may help improve the school in general but could also divert direct support away from students.

b. Recommendations for Future Researchers

Although percent failure rate is a good representation of the overall educational attainment of students in Uganda, it is not the absolute determinant indicator. There are many factors that should be considered, such as, whether or not the student is a poor or strong test-taker, if anxiety levels interfere with a student’s ability to do well on an
important exam, and, as stated by one of the stakeholders, if there was insufficient money to pay for the student’s examination fee. Also, the purpose of education should be considered. For example, the goal of improving educational attainment is to help graduates earn money and a living. Sometimes, interpersonal skills and how well one can apply what he or she has learned to real life situations can determine one’s success and be considered a result of high overall educational attainment. The type of preparation required for the national exam, such as if it required mostly memorization, might not be useful in the real world, and people might label those who rely on memorization rather than application as not educated enough.

I believe that the continuation of block grant support to secondary schools is necessary, but after certain considerations. First, policy makers and schools will need to determine who will need financial support and should distribute funds only to those who are in need and in poverty, whether it is an OVC or non-OVC. For example, if the student’s family cannot afford the child’s education or the child is an OVC, then they should be given aid. In order to target the students accordingly, certain characteristics, such as wealth level and OVC or non-OVC status, will need to be specifically defined. Second, if the amount of aid is limited and the sole purpose of the block grant, as determined by the donors, is to decrease percent failure rates on these national exams, then the academic status of the students who are on the list to receive aid should be evaluated. Further research will need to be done to determine if funding leads to higher passing rates if given to high performing motivated students, high performing unmotivated students, low performing motivated students, or low performing
unmotivated students. In addition, among all the students, there may be those, wealthy or poor, who lack the motivation to study. For these students, special focus and individual attention in another form, such as paying someone to tutor, should be available for these students in order to prepare them for the national exam. In order to prepare all students for the national exam, headmasters of schools should use funds to train educators so that they are better qualified to teach the appropriate materials for the exam. I believe that support to these teachers should also be provided in the form of books, resources, and incentives, such as the teacher whose class scores the highest on the national exams receives an award. Since there is limited funding, the selection of schools would depend on the proportion of students at the school, based on the criteria above, that need financial assistance the most.

c. Future research questions?

A possible goal for a research study in the future is to determine the cause of the discrepancy that exists between the views of the stakeholders and the results from the quantitative analysis. Majority of the stakeholders stated that block grant support benefited the school as a whole. However, when analyzing the percent failure rates of students who took the national examination, block grants seem to have made no significant impact on the students’ educational attainment.

Another research question could answer why there was a sudden increase in the percent failure rates of female students in intervention schools from 2.8% in 2008 to 4.1% in 2010, while the percent failure rates of male students in intervention schools decreased from 2.3% in 2008 to 2.2% in 2010. After block grant support began in 2006,
percent failure rates for both genders in intervention schools decreased from 2006 to 2008. Therefore, it would be interesting to see what caused this difference in trend starting in 2008.

Furthermore, research on the relationship between the students’ approach toward their education and students’ current status as high or poor performers and percent failure rates on national exams can help determine what is the most effective way to distribute limited funding. For example, with limited funding, is it most effective to give block grant support to already high performing students who are highly motivated, high performing students who are not motivated, poor performing students who are highly motivated, or poor performing students who are not motivated? In addition, further research will need to factor in the student’s socioeconomic status when measuring the student’s performance within the school. For example, wealthier students might perform differently on exams than poorer students.

Lastly, the higher percent failure rate seen in control schools than in intervention schools for male students in 2010, which came out to be statistically significant, may indicate that the block grant support finally made a difference. However, since this trend is seen only in 2010, other indicators that might have served as possible causes for this trend would need to be explored.

### d. Concluding remarks

As can be seen from this thesis, contrary to the majority of stakeholders stating that block grant support had positive effects on the school as a whole, quantitative analysis indicates that block grants did not make a significant impact on overall school
performance as measured by average percent failure rate on Form IV national exams in control and interventions schools. Further research must be done to determine the cause of this discrepancy, especially because the information available from the Ministry of Education was limited to the percent failure rates of students. Analyzing the proportion of students who failed the national exam might not be the only means to determine whether or not block grants had a positive or negative effect on students’ educational attainment. Factors related to the school environment, teacher, and the student’s socio-economic status and behavior are sure to impact school performance and the student’s educational achievement.
APPENDIX A
Procedure for the Various Types of Comparisons Made in the Quantitative Analysis:

1. A list of schools in each district was created for each year from 2001-2008, and 2010.

2. The list for each year was separated into control and intervention schools.

(a) For the failure rates of all students who took the exam in control schools vs. intervention schools:

3. Calculations for the average failure rate of male students who took the exam in control schools and intervention schools were done for each year.

4. Calculations for the average failure rate of female students who took the exam in control schools and intervention schools were done for each year.

5. Then the average failure rate of all students who took the exam was calculated.

6. Keeping the x-axis as time, y values for the average failure rates of all students who took the exam were plotted into an Excel graph.

7. 2 trends: one for control schools and one for intervention schools were drawn on a single graph for comparison.

(b) For the failure rates of male students who took the exam in control schools vs. intervention schools:

3. Calculations for the average failure rate of male students who took the exam in control schools and intervention schools were done for each year.

4. Keeping the x-axis as time, y values for the average failure rate of male students who took the exam were plotted into an Excel graph.
5. 2 trends: one for control schools and one for intervention schools were drawn on a single graph for comparison.

(c) For the failure rates of female students who took the exam in control schools vs. intervention schools:

3. Calculations for the average failure rate of female students who took the exam in control schools and intervention schools were done for each year.

4. Keeping the x-axis as time, y values for the average failure rate of female students who took the exam were plotted into an Excel graph.

5. 2 trends: one for control schools and one for intervention schools were drawn on a single graph for comparison.

(d) In intervention schools, failure rates of female students vs. male students:

3. Using the list of intervention schools for each year, the average failure rate of female students and the average failure rate of male students were calculated and plotted on the y-axis, producing two trend line: one for the percent failure rates of male students and one for the percent failure rates of female students. The x-axis was kept as time.
REFERENCES


CURRICULUM VITAE

Grace Ha

E-mail: gracha@bu.edu

Year of Birth: 1990

EDUCATION

University of Pennsylvania, College of Arts and Sciences
Bachelor of Arts, May 2012
Major: Health and Societies; Concentration: Environment and Health

Boston University School of Medicine, Graduate Medical Sciences
Master of Arts in Medical Science, May 2014

HONORS AND AWARDS

Commendatory Letter, University of Pennsylvania Police Department, Spring 2010

I assisted in administering CPR to an unconscious man who collapsed on the ground. CPR was administered until medics and the ambulance arrived on scene.

HEALTHCARE/RESEARCH EXPERIENCE

Clinical Research Assistant, Center for Global Health and Development (CGHD), Boston University School of Public Health
September 2013 – April 2014
For my Master’s thesis, I conducted in-depth research analysis of quantitative and qualitative data on the effect of block grants on Ugandan schools and students, including orphaned and vulnerable children (OVC). Quantitative analysis entailed converting numerical data on student failure rates and their association to gender differences into Excel graphs. Qualitative analysis included reorganizing transcripts from interviews with stakeholders in Uganda into charts to compare similarities and differences in their responses and understand the efficiency of these block education grants.

EMT Crew Member, Medical Emergency Response Team (MERT), University of Pennsylvania
Fall 2008- May 2012

To join this organization, students must be certified as an Emergency Medical Technician- Basic. As a member of MERT, I provided basic life support emergency
medical services to members of the University of Pennsylvania and surrounding community. Examples of scenarios that I came across as an EMT include allergic reactions, alcohol poisoning, and traumatic injuries. Each member is required to dedicate twenty-four hours to this organization every month by signing up for daytime or nighttime shifts. MERT also covers major events on campus such as Hey Day, Spring Fling, sports games involving Penn students, and others.

**Member**, Penn Medical Association, University of Pennsylvania
Fall 2008- May 2012

Penn Pre-Medical Association is an organization that provides pre-medical students an opportunity to learn about medicine. Through this organization, I attended panels where medical school students came to speak about their experiences in medical school and was able to learn more about the medical school application process. I was also given the opportunity to shadow Dr. Alan Schuricht in the General Surgery Department at the Pennsylvania Hospital and Dr. Benjamin Chang in the Plastic Surgery Department at the Hospital of the University of Pennsylvania. I observed Dr. Schuricht perform Gastric Bypass surgery and Dr. Chang perform reconstructive hand joint surgery and pediatric hand surgeries.

**Vice Chair, Secretary** Center for Undergraduate Research and Fellowship (CURF)
Undergraduate Advisory Board (UAB). University of Pennsylvania
Spring 2009- May 2012

As a member of the Undergraduate Advisory Board, I advised and assisted students in finding research positions that correspond to their interests. I also helped create and develop ideas emphasizing the importance of undergraduate research. As the Vice Chair, I attended meetings with faculty and university officials to discuss ways to integrate research into the undergraduate curriculum. Events that I helped organize include panels with graduate students who were involved in research and alumni who received fellowships and grants, panels with professors from various departments which helped provide students with an opportunity to learn more about research opportunities available in different fields of study, and seminars on how to get started in research at Penn. We also collaborated with the Dean’s Advisory Board of various science departments to hold events on research opportunities at Penn. Our largest event every year is the Undergraduate Research Symposium. It is one of the largest research symposiums held at the University of Pennsylvania. It attracts approximately one hundred presenters and over two hundred attendees each year and has had, in the past, notable speakers such as Dr. Roy Vagelos, former CEO of Merck, come and share their research experiences with the undergraduate community.

**Research Assistant**, Center for Neurodegenerative Disease Research (CNDR), Hospital of the University of Pennsylvania
Fall 2010- May 2012

As a research assistant, I worked alongside a physician scholar and senior research investigators and assisted them with their research. I treated human and mouse tissue by embedding the tissue into paraffin blocks, cutting and transferring them to slides, and staining them for further observation under the microscope. I learned techniques that are essential in preparing tissue slides utilized in research studies at CNDR. In addition, I observed tissue samples under the microscope and viewed autopsies and experimental procedures on mice.

**Physician Shadower**, Penn Medical Association, Hospital of the University of Pennsylvania

Spring 2011 (Two-day opportunity)

As a member of the Penn Pre-Medical Association, I was given the opportunity to shadow Dr. Benjamin Chang, a plastic surgeon at the Hospital of the University of Pennsylvania. I observed Dr. Benjamin Chang perform reconstructive hand surgeries. I learned how reconstructive hand surgeries are performed and the importance of teamwork in the operation room in order to perform a successful surgery.

**Intern/ Shadower**, Seoul National University Hospital, Seoul, South Korea

Summer 2010 (Three months)

As an intern, I shadowed Dr. K.C. Wang in the Pediatric Neurosurgery Department at the Seoul National University Hospital for approximately three months. I scrubbed into neurosurgeries such as rhizotomy, craniofacial reconstruction, craniotomy, and untethering, assisted with minor surgical procedures, participated in morning rounds with surgeons, and attended lectures and Neuroscience Research meetings. I learned about many neurological disorders and the treatments available and recognized many differences between the medical setting in Korea and that in the United States.

**Research Assistant**, Clinical Microbiology Laboratory, Hospital of the University of Pennsylvania

Fall 2009-Spring 2010

As a research assistant in the Clinical Microbiology Laboratory, I assisted researchers in conducting their research on *Legionella pneumophila* and performing experimental procedures involving bacterial cultures and PCR samples.

**Team Member**, Global Biomedical Service, Republic of China

Summer 2009 (two weeks)

As part of this engineering program, I traveled to the Republic of China for ten days with selected peers, physicians, and faculty members to assess patients with Cerebral Palsy in the city of Qing Yuan in Mainland China. Afterwards, we returned to an engineering
laboratory at the Hong Kong Polytechnic University to design and create ankle-foot orthotics for these patients. Multiple trips were taken to Qing Yuan to assess patients, take measurements, and apply orthotics to patients’ ankles and feet. I learned about Cerebral Palsy and how to appropriately measure patients’ feet and construct orthotics to improve their walking ability. Preparation for this trip involved taking a course on orthotics and a course on the Chinese language and culture.

**Volunteer, Pre-med Volunteer Program, Hospital of the University of Pennsylvania**  
Fall 2008-Spring 2009

As a volunteer, I participated in both levels of this program over the course of one year. In Level I, I volunteered in the Surgical Telemetry Nursing Manager’s Unit in Ravdin 9 at the Hospital of the University of Pennsylvania for more than forty-eight hours. My duties included responding to patient calls, checking and refilling medical supplies, and assisting patients and nurses with minor tasks. In Level II, I volunteered in the Emergency Room for more than fifty-two hours. I learned how to interact with patients, assisted doctors and nurses with minor tasks such as transporting patients from one department to another and delivering blood samples to the blood bank, checked and refilled supplies, and saw how hospital units managed their staff members and cared for their patients.

**Member, Focus First, University of Pennsylvania**  
Spring 2009

As a former member of this organization, I traveled to nearby schools and day cares in West Philadelphia to conduct free eye screenings on pre-school aged children. Eye screenings can lead to the early detection of visual defects such as stigmatisms, lazy eyes, cataracts, and near-sightedness. If problems are detected, the children are referred to the Wills Eye Institute where they are subsidized for a full eye exam by an ophthalmologist. I learned how to conduct eye screenings with simple devices.

**Physician Shadower, Penn Medical Association, Pennsylvania Hospital**  
Spring 2009 (one-day opportunity)

As a member of the Penn Pre-Medical Association, I was given the opportunity to shadow Dr. Alan Schuricht, a general surgeon in the General Surgery Department at the Pennsylvania Hospital. I observed Dr. Schuricht perform gastric bypass surgery. I learned the basic medical procedures involved in performing gastric bypass surgery.

**Volunteer, Emergency Preparedness Exercise, Philadelphia International Airport**  
Fall 2008 (one-day event)
As a mock-injured patient in an emergency drill, I was triaged by EMTs and firefighters at the Philadelphia International Airport and was transported to the nearest hospital in an ambulance. At the end of the exercise, I evaluated the EMTs and firefighters on their performances on patient care and treatment. As a patient in this emergency scenario, I was able to learn from other EMTs’ patient treatment methods and reassess my approach to patient care and usage of emergency medical techniques.

**LEADERSHIP/ ADDITIONAL EXPERIENCE**

**Tutor/ Consultant**, Boston Street Consulting, Newton, MA  
September 2013 – present  
As a tutor for international Korean students who are planning on or already attend boarding schools in the New England area, I teach SAT and SSAT Reading and Writing, TOEFL, ACT, History, and English. I also conduct mock interviews for students who are applying to high school and revise essays and cover letters.

**Teacher**, Real SAT, Yangpyeong, South Korea  
Summer 2012 (two months)  
Real SAT is a Korean company that provides SAT tutoring to high school students. I worked for Real SAT as a Math and Writing teacher at a summer camp located in Yangpyeong, Republic of Korea for approximately two months. I learned how to manage a group of approximately twenty students per class and how to effectively teach them mathematics and writing skills.

**Volunteer Lecturer**, Drew Elementary School, University of Pennsylvania  
Spring 2011  
As part of an Academically Based Community Service course, I was a guest lecturer for third and fourth grade students at Drew Elementary School in West Philadelphia. My team members and I gave weekly lectures to about twenty students for four months on the negative effects of tobacco smoke, contents of cigarettes and cigars, and how to react to peer pressure. I learned how to design effective lesson plans and interactive activities that involved class discussions and student participation and how to work cooperatively with my fellow team members.

**Co-Chair, Hostess, Director**, Korean Culture Show 2010, Korean Students Association, University of Pennsylvania  
Fall 2009-Fall 2010  
**Secretary**, Korean Students Association, University of Pennsylvania  
Fall 2009- Fall 2010
As the director and hostess, I put together the order of events for the show, helped design the brochure, conducted screenings for the talent show, appointed leaders for various parts of the show, and dealt with financial issues such as reserving the room and renting proper sound and stage equipment. The purpose of the annual Korean Culture Show is to give Penn students an opportunity to learn about the Korean culture through a wide variety of performances such as the traditional Korean fan dance, fashion show that displays the latest trends in Korea, performance by the Karate team at Penn, and others. I learned how to collaborate with other performing groups in order to have them perform at the show, how to finance the show, and how to work with technicians and university officials in order to reserve the venue and take care of any technical issues.

**Contributing Writer,** The Daily Pennsylvanian School Newspaper, University of Pennsylvania  
Spring 2009

As a contributing writer, I attended major events that were held on campus, interviewed major speakers and important guests, and wrote articles regarding these events for the following day’s paper. Articles that I have written include weather reports and coverage of events held for artists at the Kelly Writer’s House and radio-show hosts at the Kimmel Center. I learned how to formerly interview speakers, how to edit newspaper articles, and how an independent organization that provides news coverage functions.

**Participant,** PENNacle Pre-Orientaiton Program, University of Pennsylvania  
Fall 2008 (three-day retreat)

As a participant in the PENNacle Program, I received training on how to become a cooperative team member, a successful leader, and a skilled organizer. After acceptance into this program, I spend three days at a retreat during the summer before my freshman year. At this retreat, I learned about the various types of student leadership opportunities available at Penn, explored ways to become engaged in activities on campus, and built relationships with upperclassman leaders and peers. This program was an opportunity for me to gain particular leadership skills and facilitated my transition from high school to college.

**PROFESSIONAL CERTIFICATION**

**Emergency Medical Technician- Basic,** State of Pennsylvania (Spring 2009 – May 2012)

The Medical Emergency Response Team is an organization that consists of students who are certified as Emergency Medical Technicians and provide medical services to the Penn community. I provided basic emergency services to Penn students by taking their vital signs and assessing them for any injuries.