

Designing Targeted Educational Voucher Schemes for the Poor in Developing Countries

M. Najeeb Shafiq
Indiana University

June 2008

Abstract: A targeted educational voucher scheme [TEVS] is often proposed for the poor in developing countries. Essentially, a TEVS involves a voucher or certificate by which poor households are given the ability to pay tuition and fees for their children's schooling at participating non-public schools. However, little is known about TEVS design in developing countries. By exploring the details of TEVS design, this article provides the foundation for constructing a TEVS and conducting subsequent scientific evaluations to support, modify, or oppose the TEVS. Specifically, this article uses three policy instruments to design a TEVS: regulation, support services, and finance. Regulation refers to the rules that must be adhered to by participating households, children, and schools. Support services refer to services facilitating the participation of children, households, schools, and financial and political supporters. Finance refers to the value of each voucher, total TEVS costs, and sources of finance.

Keywords: development; educational policy; international education; privatization; voucher

* Assistant Professor, Department of Educational Leadership and Policy Studies, Indiana University. Mailing address: W.W. Wright Education Building, 201 North Rose Avenue, Bloomington, Indiana 47405, USA; phone: 1.812.856.8235; fax: 1.812.856.8639; e-mail: mnshafiq@indiana.edu. I am very grateful to Henry Levin, Robert Arno, Suzanne Eckes, A.B. Malik, Martha McCarthy, Hugh McLean, and Robert Toutkoushian for helpful comments and discussions. Many thanks also to the National Centre for the Study of Privatization (Teachers College, Columbia University), Open Society Institute, and the Punjab Education Foundation (Lahore, Pakistan), and SAHE (Lahore, Pakistan) for their kind hospitality and support. All views and errors in this article are mine, and should not be attributed to the mentioned parties.

1. INTRODUCTION

A key source of educational inequity in developing countries is that poor children have fewer educational choices than non-poor children (UNESCO, 2006). Specifically, the educational choices of poor children are limited to no schools or low-quality schools; non-poor children have greater choice because quality schools are affordable for them. A targeted educational voucher scheme [TEVS] is often proposed to remedy such educational inequities between poor and non-poor children (Levin, 2001; Patrinos, 2007). Essentially, a TEVS involves a voucher or certificate by which poor households are given the ability to pay tuition and fees for their children's schooling at participating public schools and non-public schools (including private schools, non-government organization [NGO] managed schools, and community-managed schools). The design feature of allowing poor households to choose non-public schools is common to all TEVS' and distinguishes TEVS' from other educational interventions (such as enhancing public schools or providing conditional cash transfers for attending public schools). Beyond the involvement of non-public schools, however, little is understood about TEVS design in developing countries, resulting in weak evaluations and discussions that are dominated by passion and muddle rather than sound evidence. This lack of understanding on TEVS design ultimately deprives poor households and children of educational opportunities. By exploring the details of TEVS design in developing countries, this article provides the foundation for constructing an effective TEVS and conducting scientific evaluations to support, modify, or oppose any TEVS in a developing country setting.

TEVS advocates argue that a voucher scheme expands the poor's educational choice by including schools of high quality. Advocates claim that a TEVS is an equitable intervention because it increases the educational choices of the poor relative to the non-

poor. In addition, TEVS advocates contend that a TEVS makes it financially viable for non-public schools to operate for poor children. The arguments made by TEVS advocates are especially persuasive for urban slums and rural areas where governments have failed to provide public schools, and where non-public schools have not set up because of insufficient funds and weak financial incentives. TEVS advocates further argue that the introduction of a TEVS and the consequent competition for public funds will improve the quality of public schools. As evidence that TEVS' will work, advocates point to the rapid growth of low-cost non-public schools for the poor in densely-populated urban slums and rural areas of developing countries (Andrabi, Das, and Khwaja, 2008; Bangay, 2005; Jimenez and Sawada, 1999; Patrinos, 2006; Rose, 2005; Srivastava and Wolford, 2007; Tooley and Dixon, 2007; Nath, 2002; Nath, Sylva, and Grimes, 1999).

Despite the enthusiasm of TEVS advocates on the basis of the growth of non-public schools serving the poor, the evidence on TEVS' is limited. Researchers have only conducted scientific evaluations of TEVS' in Milwaukee, New York City, and Colombia, and evaluation results show that each achieved moderate success, with improvements in educational outcomes occurring within an ethnic group, subject, or grade. Though TEVS advocates would argue that the effectiveness of TEVS' was undermined by weak design, little is known on what constitutes a well-designed TEVS in a developing country setting.

The article's approach to TEVS design recognizes that a TEVS' design is malleable, and that there are valuable lessons to be learnt from TEVS experiences in a developing and industrialized countries (Colombia, Milwaukee, and New York City), and alternative educational interventions (such as stipend and cash transfer programs).¹ Moreover, the

¹ The TEVS' in Milwaukee, New York City and Colombia emerged in the 1990s, in response to the low quality of public education facing the urban poor; thus, the underlying basis for adopting a TEVS in all settings was to reduce educational inequities between poor and non-poor children. In terms of the size, the Milwaukee and

article shall proceed as if there has been a decision to adopt a TEVS, and that the current task is to design an effective TEVS. The framework of Levin (2002) is adopted, such that a TEVS is designed using three policy instruments: regulation, support services, and finance. Briefly, regulation refers to the rules that must be adhered to by households, children, and schools participating in a TEVS; support services refer to the complementary services for households, children, participating schools, and financial and political supporters; finance refers to the value of each voucher, total costs, and sources of finance.

Before proceeding, several points require clarification. First, this article recognizes that through its main emphasis on equity, a TEVS is but one type of an educational voucher scheme. Other types of voucher schemes (the designs of which are not explored in this article) place greater emphasis on other criteria such as freedom of choice, productive efficiency, or social cohesion (Levin, 2002).

A second point of clarification is that the article accepts that there is no one developing country, and that the design of an effective TEVS will vary significantly within and across developing countries. The only assumptions this article makes about developing countries are pervasive poverty, a large share of out-of-school children, limited or no educational choice, weak overall infrastructure, and severely constrained public education budgets.

Third, this article acknowledges that the design of a TEVS for developing countries must expand beyond the public-private domain to remain relevant because schooling in

New York City TEVs each issued less than 5000 vouchers (though Milwaukee now has around 15,000 voucher students); Colombia's TEVS issued 125,000 vouchers for secondary education, which covered about 1 percent of the secondary school age population. I focus on the conditional cash transfer schemes in Bangladesh (Food-for-Education), Mexico (PROGRESA, later renamed Oportunidades), and Brazil (Bolsa Escola, later renamed Bolsa Familia); each provided poor mothers with cash or food in exchange for enrolling their children in school. The Mexican scheme has achieved much success in increasing school (Schultz, 2002); the Bangladeshi and Brazilian schemes have achieved relatively modest success in increasing school enrollment (Ravallion and Wodon, 1999; de Janvry, Finan, and Sadoulet, 2006). Different forms of these conditional cash transfer schemes continue to this present day.

developing countries is provided by not only public schools and private schools, but also NGO-run schools and community-run schools. Therefore, this article's focus is not strictly on educational privatization.

The last point of clarification is that this article's only goal is to examine a TEVS' design, and not to assess the arguments in favor and against a TEVS; for discussions on the merits and weaknesses of voucher schemes, see Belfield and Levin (2003), Carnoy (1996), and West (1996). Nonetheless, it is useful to briefly describe the debates between advocates and critics of voucher schemes. Advocates claim that a TEVS provides greater freedom of choice and efficiency than the traditional system. In contrast, TEVS critics argue that the poor may not necessarily have greater freedom of choice, are unlikely to be efficient, and that a system of non-public schools undermines social cohesion. Colclough (1996) provides a general discussion on educational privatization in the developing countries. Belfield and Levin (2002) and Vawda and Gauri (2004) provide introductions to educational vouchers in developing countries. Chubb and Moe (1990), Friedman (1962; 1993), Henig (1994), Gill et al. (2001), Levin (2001), Neal (2002) give an overview of TEVS' in industrialized countries. Debates on educational privatization and therefore TEVS' are generally dominated by ideology rather than scientific evaluations and evidence-based discussions. By providing the details of a TEVS' design, this article provides the foundation for scientific evaluations and evidence-based discussions to support, modify, or oppose any TEVS in a developing country setting.

2. DESIGNING A TEVS

2.1 Regulations

As mentioned earlier, designing a TEVS using regulations refer to identifying and

enforcing the rules that must be adhered to by households, children, and schools participating in a TEVS. A TEVS' effectiveness and sustainability depends on clear and manageable regulations. In Colombia, for example, vague and unmanageable regulations are cited as the main cause of prematurely ending the TEVS (Mayer, 2004). Similarly, a 2005 report cited widespread confusion over regulations in Brazil's Bolsa Escola conditional cash transfer scheme (de Janvry, Finan, and Sadoulet, 2006).

Designing a TEVS using regulations initially involves determining a TEVS' location and size, and the system of distributing and collecting of vouchers. The location of a TEVS is of central concern because there may not be any available public or non-public schools, while distant schools involve high transportation costs and safety risks. The adoption of a TEVS is especially appropriate in urban slums. For example, in the urban slums of Lahore, Pakistan, there is no choice of local public schools because the government refuses to build public schools in illegal residential areas (Shafiq, 2006). As discussed in the previous section, however, the poor in developing countries are also responding to private and other non-public educational interventions in densely-populated rural areas. In sparsely populated areas, such as much of rural Sub-Saharan Africa and Central Asia, a TEVS' appropriateness depends on it attracting new non-public schools in those areas or the availability of transportation to other villages with non-public schools.

A TEVS's distribution regulations include the frequency of the distribution and the method of distribution. Colombia's educational voucher scheme, for example, offered payments to schools three times a school year (King et al., 1997). A high frequency of distribution implies a greater effort and costs on the part of participating households and schools to provide evidence that all regulations are being met; thus, distributing between two and three times a year (depending on the number of semesters) is a reasonable arrangement.

Another distribution issue is whether to provide the vouchers to households or schools. The advantage of providing to schools is lower cost, since the number of schools is less than the number of households; however, this arrangement would also require extensive efforts at collecting feedback from households on whether schools are effectively distributing the vouchers.

2.1.1 Regulations for households and students

For children and households, TEVS regulations include determining the participation eligibility based on socioeconomic status, age, grade level, schooling history, gender, academic standards, and special education needs. Though a TEVS is an intervention designed for poor children and households, clear regulations are necessary to determine what “poor” is. The task of identifying the poor is relatively simple in poor areas, such as urban slums or rural villages. Identifying the poor becomes challenging if the poor reside in the same areas as the non-poor, such as most cities; in such cases, the collection of socioeconomic data from all households is arguably a necessary and costly step. One alternative to data collection for determining socioeconomic status is for TEVS planners to assume that children that previously attended non-public schools belong to a higher socioeconomic group, and should therefore be excluded; though Colombia’s former TEVS followed this approach (King et al. 1997), it is advisable to include children who have attended non-public schools which cater to the poor.

Among poor households, the education of girls is frequently neglected in the developing world (UNICEF, 2005). In a recent report, Lewis and Lockheed (2006) estimate that poverty and other cultural, religious and social barriers are responsible for sixty million girls not being in school. To address pro-male gender gaps in education, a TEVS’ design can

include a regulation to provide more vouchers for girls than boys.

Given a TEVS' inherent emphasis on equity, it is natural to include regulations that allow the participation on children with special needs. For example, court orders required that the Milwaukee and New York City TEVS' provide vouchers to poor children with special needs. Since special education is prohibitively expensive for poor households, a TEVS can make a significant difference in increasing enrollment rates among poor children with special needs. Accordingly, TEVS staff will have to initiate collaborations with special education centers.

Though a regulation on the age-limits of participating children is required, determining the ages of participating children is likely to be problematic because poor households may not have birth certificates and may be unable to recall birth dates. In such cases, TEVS staff may have to accept the testaments of parents. To avoid household data collection and cut total costs of interviewing households, a TEVS can delegate the verification duties to participating schools.

The effectiveness of a TEVS depends on increased enrollment rates of poor children, and ensuring that participating children meet the academic standards at schools. A TEVS should therefore include minimum attendance and performance regulations for TEVS children, such that the renewal of vouchers to TEVS children would be conditional on the children meeting these minimum standards. It is also important to not penalize schools if TEVS children do not meet minimum standards; otherwise, schools will have the incentive to refuse entry or (if enrolled) inflate the performance of poorly-performing TEVS children. Likewise, punishing TEVS children who do not meet performance standards is inequitable because the poorest are most likely to fail.

A TEVS design should also include a regulation for cases where the number of

voucher applicants exceeds the number of available vouchers. The regulation could call for randomly accepting applicants. The advantage of this lottery approach is the low costs of costs of administering the lotteries; its disadvantage is that some of the neediest children will not be picked. Alternatively, a TEVS can give priority to girls, children from the poorest households, or placing limits on vouchers per household; however, there are larger administrative costs associated with this criteria-based approach.

Finally, a regulation on voucher non-tradability prevents voucher participants from selling the vouchers in the black market. In addition to clearly communicating the regulation on non-tradability to participants, each voucher should include features such as an official seal, the participating child's photograph, and a laminated cover.

2.1.2 Regulations for schools

For schools, TEVS regulations include determining quality standards, curriculum, and religious affiliation. Since a central goal of a TEVS is to provide poor households with better quality educational choices, a TEVS should have a regulation on teacher qualifications, ventilated class rooms, latrines, seating, supplies, and protection from the weather. There is evidence that poor households reject TEVS participation if the quality of participating schools is inadequate. In the Milwaukee TEVS, for example, approximately 30 percent of the choice students left the participating private schools each year partly because of dissatisfaction with participating private schools (Witte, 2001). To check that schools are following TEVS quality regulations, TEVS staff can perform unannounced inspections to schools.

Facing a limited budget but large numbers of out-of-school children, a TEVS' design has to prioritize by grade-level. Schools charge more for secondary education than for

primary education, which implies that the tradeoff of issuing vouchers for secondary education is much fewer vouchers for primary education. Given that the policy urgency on raising enrollments in primary education in developing countries (UNESCO, 2006), a TEVS' design may prioritize issuing vouchers for primary education; if there are leftover funds, then vouchers for secondary education may be issued.

Several scholars have addressed the social cohesion implications of non-public schools (Arnove, 1997; Samoff, 1990). In the case of a TEVS, the concern would be that participating non-public schools may not prepare students for participation in the social, political, and economic institutions of society (Belfield and Levin, 2002). To support the social cohesion purposes of education, a TEVS may require that participating non-public schools' curriculum include mathematics, sciences, language, history, cultural studies, civics, and perhaps moral or religious studies. To remain socially relevant, a TEVS may also encourage participating non-public schools to tailor curriculums for the circumstances facing the targeted children. For example, TEVS schools catering to urban slum children may place greater emphasis on sex education because urban slum children face greater vulnerability to coercion into sexual activity (Mugish, 2006). Similarly, TEVS schools in rural areas may offer lessons in agricultural education. Since poor populations rarely have access to clean water, curriculums incorporating health education such as handwashing and point-of-use water treatment may reduce diarrhea and improve TEVS participation (Zwane and Kremer, 2007).

Regulation on the participation of religious schools is a sensitive issue because of concerns over social cohesion. In the Milwaukee and New York City TEVS', for example, only secular private schools were initially allowed to participate; eventually, court orders allowed religious schools to participate (Rouse, 1998). In pre-dominantly Muslim countries, allowing the participation of religious schools is certain to raise serious social cohesion

concerns (Hefner and Zaman, 2007). If Islamic schools are allowed to participate, a TEVS may struggle to find political and financial support, especially from international donors and organizations. In secular democracies, a TEVS can perhaps include religious schools provided that the schools meet all other regulations (especially curriculum regulations), support services, and finance design aspects, and not proselytize students.

A potentially distressing scenario is when a TEVS school hikes up its tuition and fees after enrolling a TEVS child. If the hike is such that the new tuition and fees are significantly greater than a voucher's value, then many TEVS households and children will be forced to drop out. To avoid such a scenario, a TEVS can require all participating schools to not raise tuition and fees during an academic year. Under exceptional and legitimate circumstances, a TEVS can prevent a tuition and fee hike by offering grants or loans to the troubled schools.

Since the poorest children are typically less-able and costliest to educate, TEVS schools—particularly profit-maximizing schools—have an incentive to only select able applicants and reject the rest. Concerns of negative peer-effect or biases from the parents of non-TEVS-students may also pressure participating schools to reject poor children. In addition to setting regulations against the discrimination of children from the poorest households and marginalized groups, a TEVS may offer financial bonuses to schools that serve the children from the poorest and marginalized populations.

2.2 Support Services

Designing a TEVS using support services involves the provision of services that enable all households, children, and schools to participate fully in a TEVS. Specific support services include the provision of supplies, transportation, information, outreach, and

evaluation.

Since participating households are poor, a TEVS may consider the provision of learning-related inputs such as textbooks, workbooks, writing supplies, and uniforms. Textbooks, in particular, are recognized as a highly cost-effective method of improving student achievement in developing countries (Farrell, 1993). A TEVS can designate to schools the ordering and distribution of the inputs to schools because requirements vary for each school. Periodically, a TEVS may collect and check the receipts of purchase and distribution records from schools.

Recent evidence indicates that the provision of basic vaccinations, nutrients, and other school-site health care may significantly improve a TEVS' effectiveness. For example, experiences from Mexico's school site health care (a part of its conditional cash transfer scheme) and Kenya's school site de-worming services resulting in substantial gains in enrollment, attendance, and learning (Gertler, 2004; Miguel and Kremer, 2004).

A particularly desirable support service is the provision of transportation. TEVS experiences from the developing and industrialized countries indicate that transportation costs discourage poor households from TEVS participation (Belfield and Levin, 2002). Even former TEVS households in New York City—an area with impressive and affordable public transportation systems—have cited transportation costs as a main reason for dropping out of the TEVS. Given the worldwide teacher shortage problems in poor areas (Siniscalco, 2002), a TEVS in a developing country can also offer transportation to teachers and school staff. The specific transportation arrangement for students and teachers can either involve providing participating schools additional funds to arrange for transportation services, or contracting with a transportation company to serve TEVS participants.

Much of a TEVS' effectiveness hinges on the provision of clear and easily accessible

information for participating households and schools. The information should explain regulations, other support services, and finance (to be discussed). Providing information to households, however, is challenging because participants are often illiterate and may not own radios and televisions. Accordingly, a TEVS must appoint counselors to explain all the relevant information to households. Counselors may also have to be appointed to settle conflicts between participating households and schools. For example, households may complain of discrimination or accuse teachers of withholding instruction (to ensure a demand for after-hours private tutoring services; Bray, 1999). Schools may similarly complain of lack of cooperation from households.

The provision of information to schools through workshops and manuals are also necessary. Since large shares of children in the developing world are not in school, a TEVS would require new non-public schools to enter and existing schools to expand in order to accommodate the increased enrolment. In addition, a TEVS must make formal arrangements with local governments to facilitate the entry of new schools and expansion efforts of existing schools.

The sustainability of a TEVS depends on outreach, funding, and evaluation efforts. To garner political and financial support, a TEVS must have outreach and fundraising staff. These staff will have to collaborate with the public education system, public teacher unions, and the sources of finance: the central government, local government, NGOs, international organizations, donors, and local businesses. Presumably, the public education system and teacher unions will oppose a TEVS on the grounds that funds will be diverted away from public schools. Resistance from the public education system and teacher unions can persist even if new funds are introduced, if it is argued that TEVS funds can instead be used to improve the quality of public schools and create interventions that increase demand for

public education.

Existing educational interventions have had varying experiences with the public education system and teacher unions. The conditional cash transfer schemes of Mexico and Bangladesh attracted political and financial support during expansion because the schemes supported the public education system and teachers. In contrast, the large Chilean voucher scheme (targeting all households and children, regardless of socioeconomic status) was able to incorporate private schools because its then-dictator General Pinochet abolished powerful public teacher unions. A small TEVS, however, need not require the support from the public education system and teacher union because the stakes are low. New York City's TEVS of fewer than 5000 vouchers, for example, was financed by private sources, and hardly a threat to the public education system and public school teachers. In general, the more ambitious the size and features of a TEVS, the greater the perceived threat to the public education system and teacher unions, and the stronger and costlier the necessary outreach and fundraising efforts.

A final support service is the inclusion of periodic scientific evaluations for identifying weaknesses in a TEVS' design. These evaluations should not only examine a TEVS' effectiveness (that is, improving an educational outcome) but also the monetary cost of each unit of effectiveness. Here is a hypothetical example: the cost of using a TEVS to enroll a poor child in a quality non-public school for a year is \$400; in contrast, the cost of using a conditional cash transfer scheme (where households are given cash in exchange for enrollment) to enroll a poor child in a public school for a year is \$200. If the goal is to enroll a child in school for a year, then a TEVS appears less cost-effective. Complicating the analysis, however, is the fact that a child attending a TEVS school is getting a better quality education than the child attending a public school. There are methods of resolving these and

other complexities in cost-effectiveness research; for details, the textbook by Levin and McEwan (2001) is strongly recommended.

In general, positive evaluation results are useful for convincing present and perspective funding sources. Indeed, systematic and objective scientific evaluations are increasingly becoming the basis for financial and political support (Duflo, 2004). For credibility, the evaluation should be conducted by a non-partisan group (such as researchers from local universities) with an understanding of sophisticated evaluation methods.

2.3 Finance

Designing a TEVS using finance involves determining the following: the sources of finance; the monetary value of each voucher; the total monetary value of all vouchers taken up in a TEVS; and all costs associated with regulating and supporting a TEVS. The financing of a TEVS can come from one or more of the following sources: the central government, local governments, NGOs, community organizations, local businesses, and international donors and organizations.² A smaller TEVS, such as the New York City TEVS of 5000 vouchers, can be supported by private donors. In a developing country, where most children are poor and governments are severely constrained, a TEVS must aggressively seek financing from multiple sources. A TEVS' total costs is the sum of the monetary value of all vouchers issued (the average monetary value of each voucher multiplied by the number of vouchers that are taken up by households) plus the costs of regulating and supporting a TEVS.

A key purpose of a TEVS is to compensate the direct costs of schooling for the

² International organizations and donors include multilateral and bilateral organizations. Multilateral organizations include the Asian Development Bank [ADB], African Development Bank, Inter-American Development Bank, UNESCO, UNICEF, and the World Bank. Bilateral organizations include Canadian International Development Agency [CIDA], United Kingdom Department for International Development [DFID], and United States Agency for International Development [USAID].

poor. A larger compensation for direct costs (such as tuition, fees, books, and supplies) implies a larger value of each voucher. Research shows that the value of each voucher is a key determinant of participation in a TEVS. In particular, poor households avoid TEVS participation if the voucher value is less than the typical direct cost of available schooling (Belfield and Levin, 2002). A TEVS' voucher should therefore cover the average direct costs of schooling facing poor households; at the very least, the average voucher value should be such that households are able to afford the cheapest available schooling option. A larger voucher value implies greater choice of schools for poor households and children. If a TEVS is designed for multiple regions, then the issue of educational cost differences across regions will arise. It can be argued, for example, that voucher values should be greater in urban areas than rural areas because urban schools are costlier. A TEVS may therefore vary the value of a voucher by region. Furthermore, the value of the voucher will have to be periodically updated to account for inflation.

The direct costs of some schooling choices will exceed the voucher value. To accommodate TEVS households that prefer costlier schools, a TEVS can include an add-on feature that allows households to pay the balance if the costs exceed the voucher value; without an add-on feature, choice is restricted to schools that charge an amount that is equal or less than the voucher value. The advantage of an add-on feature is that it permits households to choose schools where the tuition and fees exceed the voucher value—thereby increasing the choice of schools. The main disadvantage of an add-on feature is that greater educational choices only apply to less-poor households; the poorest households cannot afford to add-on and therefore have the least educational choice. Another disadvantage of an add-on feature is that it creates an incentive for non-public schools to raise tuition and fees, which increases the financial burden for TEVS households.

An ambitious TEVS may consider compensating for both the direct costs and the indirect costs of schooling (that is, foregone child labor earnings) because poor households struggle to survive without child labor earnings. No 'TEVS' have attempted to provide compensation for indirect costs. The challenge in providing indirect cost compensation is that indirect costs are significantly greater than direct costs (Bennell, 1996); for example, the ratio of total indirect costs to total direct costs in rural Bangladesh is 11:1 (Shafiq, 2007). Thus, a TEVS that is designed to provide full compensation for indirect costs can raise total costs enough to seriously compromise the size of a TEVS. One solution is for 'TEVS' to offer partial compensation for indirect costs, following the design of Bangladesh's and Mexico's conditional cash transfer schemes. Evaluation results from rural Bangladesh suggest partial indirect cost compensation encourages school enrollment, but have little effect on child labor practices (Ravallion and Wodon, 2001). In rural Mexico, however, partial indirect cost compensation reduces child labor (Schultz, 2004).

A key finance-related dilemma in designing a TEVS is that the large costs associated with an effective design jeopardize a 'TEVS' size. Regulations on all participants are costly to support and enforce. Indeed, excessive regulations increases the operating costs for schools and forces participating schools to raise tuition and fees; consequently, a TEVS will have to readjust the voucher value to cover the increased direct costs, resulting in even higher total TEVS costs and fewer vouchers. In particular, the provision of special education will result in drastically fewer vouchers because the per-child costs of special education are considerably greater than the cost of non-special education (these costs are even larger if rural children with special needs are compensated with room and board for attending urban special education schools). Similarly, generous provision of support services such as supplies, transportation, schools-site health care, information, conflict resolution, and outreach and

fundraising activities raise costs. Finally, greater compensation of direct costs and especially indirect costs raises a TEVS' total costs.

The twin issues of effectiveness and costs draw attention to a TEVS' cost-effectiveness relative to the existing educational system and alternative educational interventions (such as conditional cash transfer schemes, scholarships, and constructing or improving public schools). The sustainability and growth of a TEVS depends on its ability to main cost-effectiveness relative to the existing and alternative arrangements. In a simulation exercise, Levin and Driver (1997) suggest that the costs and effectiveness of a voucher system in the US may not always be superior to the existing educational system. Regardless of a TEVS' educational effect, Levin and Driver show that a shift from the prevalent system of state finance and governance of education to one based upon educational vouchers will require profound transformation of institutions required to support the school system, therefore resulting in large initial costs. Levin and Driver however argue that the real issue is not costs, but whether the educational effectiveness of a TEVS relative to the existing system is justified by the additional costs. Budgeting for cost-effectiveness studies in TEVS' budget therefore provides scientific evidence for determining the appropriateness of a TEVS relative to the existing educational system and alternative educational interventions. Indeed, a thorough understanding of TEVS design elements combined with cost-effectiveness studies provide a sound basis for supporting, modifying, or opposing a particular TEVS.

3. CONCLUSION

In cases of low quality public schools and costly non-public schools, a TEVS for poor households and children may be a suitable intervention for reducing inequities in educational outcomes. In effect, a TEVS provides the poor with the funds to afford quality

non-public schools, and makes it financially feasible for new and existing non-public schools with the financial motivation to serve the poor. This article supposed that a TEVS has been adopted, and that the task at hand is to design an effective TEVS for the poor in developing countries. Accordingly, this article examined the design of a TEVS using regulation, support services, and finance policy instruments. The following is a summary of the design elements of an effective TEVS in a developing country setting.

Designing a TEVS using regulation involves determining a TEVS' distribution method, location, and eligibility regulations for children and schools. Regarding distribution methods, periodic distribution (perhaps once each semester) via schools is less costly. Rural areas and urban slums typically contain large numbers of poor, so TEVS' for such locations are appropriate; targeting areas with different socioeconomic groups (such as urban areas), however, imply greater costs associated with identifying the poor. Setting age-group and educational background regulations for children are also problematic because poor households may be unable or unwilling to provide adequate documentation. Issuing more vouchers to girls than boys is particularly suitable in settings where pro-male educational gender gaps persist. The inclusion of minimum academic performance regulations for children is problematic because it works against the very poorest children (who are least likely to meet the performance regulations). The provision of special education is desirable given a TEVS' equity goals, but will either significantly raise a TEVS' total costs or drastically reduce the number of non-special education vouchers. Other regulations for children include assigning vouchers randomly or to the neediest children (in case of excess demand for vouchers), and ensuring that vouchers are not tradable.

A TEVS's design also includes the use of regulation for participating schools. Minimum school quality regulations are consistent with TEVS' mission of providing quality

non-public schools. Regulations on curricula and religious affiliation ensure that the private and social goals of education are being met. It is also useful to include regulations to protect TEVS households and children from tuition hikes and discrimination.

A TEVS' design using support services involves various provisions for participants. Providing supplies, school-site health care, information, transportation, and conflict resolution for poor children and households significantly aids their participation. Similarly, the provision of information, transportation, and conflict resolution services assists the participation of schools. Finally, support services in the form of outreach, fundraising, and scientific evaluations are valuable for securing funding and ensuring a TEVS' sustainability.

The design of TEVS using finance includes covering the direct costs facing households, providing an add-on feature for households, offering partial compensation for children's indirect costs, and evaluating a TEVS on the basis of its cost-effectiveness. It is essential that the value of a voucher is such that it covers the direct costs of a typical quality schools. Including an add-on feature for households, however, raises equity issues because relatively richer TEVS households will have greater educational choice. Offering full compensation for indirect costs is highly impractical because foregone child labor earnings are significantly larger than direct costs; however, offering partial compensation is an option.

It is worth reiterating that this article has made no claims on the superiority of a TEVS over alternative educational interventions at improving educational opportunities for the poor in developing countries. Nonetheless, adopting the design recommendations in this article will ensure that a TEVS enjoys some degree of effectiveness and cost-effectiveness.

REFERENCES

- Andrabi, Tahir, Jishnu Das, and Asim Khwaja. 2008. "A dime a day: The possibilities and limits of private schooling in Pakistan." *Comparative Education Review* 52:329-355.
- Angrist, Joshua, Eric Bettinger, Erik Bloom, Elizabeth King, and Michael Kremer. 2002. "Vouchers for private schooling in Colombia: Evidence from a randomized natural experiment." *American Economic Review* 92:1535-1558.
- Arno, Robert. 1997. "Neoliberal education policies in Latin America: Arguments in favor and against." In *Latin American Education: Comparative Perspectives*, edited by Carlos Alberto Torres and Adriana Puiggrós. Boulder, CO: Westview.
- Bangay, Colin. 2005. "Private education: relevant or redundant? Private education, decentralization and national provision in Indonesia." *Compare* 35:167-179.
- Belfield, Clive, and Henry Levin. 2003. "Educational Privatization: Causes, Consequences, and Planning Implications." In *Fundamentals of Educational Planning*, IIEP Series. Paris: UNESCO.
- Bennell, Paul. 1996. "Rates of returns to education: Does the conventional pattern prevail in Sub-Saharan Africa." *World Development* 24:183-199.
- Bray, Mark. 1999. "The shadow education system: Private tutoring and its implications for planners." In *Fundamental of Education Planning* series 61. Paris UNESCO.
- Carnoy, Martin. 1997. "Is privatization through education vouchers really the answer? A comment on West." *World Bank Research Observer* 12:105-116.
- Chaudhury, Nazmul, Jefferey Hammer, Michael Kremer, Karthik Muralidharan, and F.Halsey Rogers. 2006. "Missing in action: Teacher and health worker absence in the developing world." *Journal of Economic Perspectives* 20:91-116.

- Chubb, John, and Terry Moe. 1990. *Politics, Markets and Americas Schools*. Washington, DC: Brookings Institution.
- Colclough, Christopher. 1996. "Education and the market: Which parts of the neoliberal solution are correct?" *World Development* 24:589-610.
- de Janvry, Alain, Frederico Finan, and Elisabeth Sadoulet. 2006. "Evaluating Brazil's Bolsa Escola program: Impact on schooling and municipal roles." Berkeley, CA: University of California at Berkeley.
- Duflo, Esther. 2004. "Scaling up and evaluation." Pp. 341-369 in *Annual World Bank Conference on Development Economics 2004: Accelerating Development*, edited by Francois Bourguignon and Boris Pleskovic. Washington, DC: World Bank and Oxford University Press.
- Farrell, Joseph. 1993. "International lessons for school effectiveness: The view from the developing world." In *Teachers in Developing Countries: Improving Effectiveness and Managing Costs*, edited by Joseph Farrell and Jao Oliviera. Washington, DC: Economic Development Institute, World Bank.
- Friedman, Milton. 1962. "The Role of Government in Education." In *Capitalism and Freedom*. Chicago: University of Chicago.
- . 1993. "Public schools: Make them private." *Education Economics* 1:32-44.
- Gauri, Varun, and Ayesha Vawda. 2004. "Vouchers for basic education in developing economies: An accountability perspective." *World Bank Research Observer* 19:259-280.
- Gertler, Paul. 2004. "Do conditional cash transfers improve child health? Evidence from PROGRESA's control randomized experiment." *American Economic Review* 94:336-341.
- Gill, Brian, P. Michael Timpane, Karen Ross, and Dominic Brewer. 2001. *Rhetoric versus*

- Reality: What We Know and What We Need to Know About Vouchers and Charter Schools.*
Santa Monica, CA: RAND.
- Hefner, Robert, and Muhammad Zamaan (Eds.). 2007. *Schooling Islam: The culture and politics of modern Muslim education.* Princeton: Princeton University Press.
- Jimenez, Emmanuel, and Yasuyuki Sawada. 1999. "Do community-managed schools work? An evaluation of El Salvador's EDUCO program." *World Bank Economic Review* 13:415-441.
- King, Elizabeth, Laura Rawlings, Marybell Gutierrez, and Carlos Pardo. 1997. "Colombia's targeted education voucher program: Features, coverage, and participation. World Bank: Washington, DC." Working Paper, Impact Evaluation of Reforms.
Washington, DC: The World Bank.
- Kremer, Michael, and Alix Peterson. 2007. "What works in fighting diarrheal diseases in developing countries? A critical review." *World Bank Research Observer* 22:1-24.
- Krueger, Alan, and Pei Zhu. 2004. "Another look at the New York City school voucher experiment." *American Behavioral Scientist* 47:658-698.
- Levin, Henry (Ed.). 2001. *Privatizing Education: Can the Market Deliver Freedom of Choice, Productive Efficiency, Equity and Social Cohesion?* Boulder, CO: Westview.
- . 2002. "A comprehensive framework for evaluating educational vouchers." *Educational Evaluation and Policy Analysis* 24:159-174.
- Levin, Henry, and Clive Belfield. 2005. "Vouchers and public policy: When ideology trumps evidence." *American Journal of Education* 111:548-567.
- Levin, Henry, and Cyrus Driver. 1997. "Cost of an educational voucher system." *Education Economics* 5:265-283.
- Levin, Henry, and Patrick McEwan. 2001. *Cost-Effectiveness Analysis: 2nd Edition.* Thousand

- Oaks, CA: Sage Publications.
- Mayer, Patricia. 2004. "The use of educational vouchers in Colombia." NCSPE Paper No. 92. New York: National Center for the Study of Privatization in Education.
- McEwan, Patrick. 2004. "The potential impact of vouchers." *Peabody Journal of Education* 79:57-80.
- McEwan, Patrick, and Martin Carnoy. 2003. "Does privatization improve education? The case of Chile's national voucher plan." In *Choosing Choice: School Choice in International Perspective*, edited by David Plank and Gary Sykes. New York: Teachers College.
- Miguel, Edward, and Michael Kremer. 2004. "Worms: Identifying impacts on education and health in the presence of treatment externalities." *Econometrica* 72:159-217.
- Mugisha, Frederick. 2006. "School enrollment among urban non-slum, slum and rural children in Kenya: Is the urban advantage eroding?" *International Journal of Educational Development* 26:471-482.
- Nath, Samir. 2002. "The transition from non-formal to formal education: the case of BRAC, Bangladesh." *International Review of Education* 48:517-524.
- Nath, Samir, Kathy Sylva, and Janice Grimes. 1999. "Raising basic education levels in rural Bangladesh: The impact of a non-formal education program." *International Review of Education* 45:5-26.
- Neal, Derek. 2002. "How would vouchers change the market for education?" *Journal of Economic Perspectives* 16:25-44.
- Panchamukhi, P.R., and Santosh Mehrotra. 2005. "Assessing public and private provision of elementary education in India." In *Universalizing Elementary Education in India: Uncaging the 'Tiger' Economy*, edited by Santosh Mehrotra, P.R. Panchamukhi, Ranjana Srivastava, and Ravi Srivastava. New Delhi: Oxford University Press.

- Patrinos, Harry. 2006. "Public-private partnerships: Contracting education in Latin America." World Bank Working Paper. Washington, DC.
- . 2007. "Demand-side financing in education." Education Policy Series, International Academy of Education (Paris) and International Institute for Educational Planning (Brussels). Paris: UNESCO.
- Rose, Pauline. 2005. "Privatization and decentralization of schooling in Malawi: Default or design?" *Compare* 35:153-165.
- Rouse, Cecilia. 1998. "Private school vouchers and student achievement: An evaluation of the Milwaukee parental choice program." *Quarterly Journal of Economics* 113:553-602.
- Schultz, T. Paul. 2004. "School subsidies for the poor: evaluating the Mexican Progresa poverty program." *Journal of Development Economics* 74:199-250.
- Shafiq, M. Najeeb. 2006. "The Prospect of an Educational Voucher Scheme for Punjab's Katchi Abadi (Urban Slum) Children." Background paper. Budapest and Lahore: Open Society Institute and Punjab Education Foundation.
- . 2007. "Household rates of return to education in rural Bangladesh: Accounting for direct costs, child labor, and option value." *Education Economics* 15:343-358.
- Siniscalco, Maria. 2002. "A Statistical Profile of the Teaching Profession." Geneva and Paris: International Labour Organization and UNESCO.
- Srivastava, Prachi, and Geoffrey Walford (Eds.). 2007. *Private Schooling in Less Economically Developed Countries: Asian and African Perspectives*. Didcot, Oxon: Symposium Books.