



COMMONWEALTH *of* LEARNING



Value For Money Review and Social Return on Investment Analysis

Ed Du Vivier

Value For Money Review and Social Return on Investment Analysis

of supports from the Commonwealth of Learning
for the establishment of new open schools

Between 2012 and 2015, the Commonwealth of Learning financed a series of interventions to support the establishment of open schools in Vanuatu and Belize. This document summarises details of an *ex post* value for money analysis of these initiatives. Its findings are expected to inform the implementation of COL's Strategic Plan for the period 2015–2021, as well as provide support for funding requests to donors.

Ed Du Vivier

November 2016



COMMONWEALTH *of* LEARNING

The findings, interpretations, opinions and conclusions expressed in this document are entirely those of the author and should not be attributed in any manner to the Commonwealth of Learning, members of its Governing Board or its employees. COL does not guarantee the accuracy of the information or data in this publication and accepts no responsibility for any consequences of their use.



Commonwealth of Learning, 2016

CC-BY-SA (Attribution-ShareAlike)

<http://creativecommons.org/licenses/by-sa/4.0>

The moral rights of Edward F. Du Vivier to be recognised as the author of this work have been asserted. This report contains edited excerpts from other documents produced by the author.

Any part of this document may be reproduced without permission but with attribution to the Commonwealth of Learning and the author.

Supporting materials

Supporting materials for the report are available online at <http://hdl.handle.net/11599/2440>

Published by:

COMMONWEALTH OF LEARNING

4710 Kingsway, Suite 2500
Burnaby, British Columbia
Canada V5H 4M2

Telephone: +1 604 775 8200

Fax: +1 604 775 8210

Web: www.col.org

E-mail: info@col.org

Terms of Reference

1. The Consultant shall be responsible to:
 - 1.1. identify costs incurred by the implementing agency, including development or set-up costs, operational costs, and monitoring and evaluation costs;
 - 1.2. identify costs incurred by development partners to take part in the project activities, direct costs of implementing the project, as well as indirect costs (especially staff time devoted to the project that could have been used for other things);
 - 1.3. identify “other” costs, including any costs incurred by the ultimate beneficiaries of the project, political costs, costs associated with peripheral or unintended project impacts (e.g., environmental costs) and costs of any envisaged scaling-up of activities after the project’s completion;
 - 1.4. estimate quantifiable benefits of the project and assess those that are unquantifiable;
 - 1.5. carry out an analysis of cost-efficiency to determine the relative efficiency and associated expenditure to convert monetary inputs into outputs, and compare with international benchmarks (where available);
 - 1.6. analyse cost-effectiveness to determine the relative effectiveness and associated expenditure to convert monetary inputs into outcomes and impacts, whilst showing consideration of critical cost-effectiveness drivers;
 - 1.7. where the wider benefits of the project can be credibly monetised, carry out a cost–benefit analysis;
 - 1.8. where cost metrics and outcome/impact indicators have not been built into the project’s monitoring and evaluation framework, make recommendations for future projects; and
 - 1.9. assess provisions to ensure the financial sustainability of the project after supports from the implementing agency have been withdrawn, and estimate such costs (or revise these estimates if they have already been included in the original project proposal).
2. To complete the task, the Consultant will employ the following methodologies:
 - 2.1. review and analysis of existing project plans, activity reports and other documentation;
 - 2.2. review and analysis of statements of expenditure by COL and partner bodies;
 - 2.3. analysis of additional documentation, research reports and expenditure data provided by partner bodies in response to specific requests from the Consultant;
 - 2.4. quantitative research (using an online or emailed questionnaire to collect non-monetary data) for COL staff and partner bodies to indicate their assessment of project outputs and outcomes;

- 2.5. Internet search for other relevant documentation to establish a basis for estimating the monetary value of wider project impacts;
- 2.6. provide periodic updates to COL on a regular basis over the term of the contract on the status of the activities undertaken, upcoming schedules and any issues or problems encountered; and
- 2.7. submit to COL a final report (comprising the findings and interpretation of research into non-monetary outcomes and impacts; cost-efficiency analysis; cost-effectiveness analysis; recommendations and estimates for the sustainability of project interventions; as well as conclusions and recommendations).

Acknowledgements

This project would not have been possible without the generous contributions of time and energy from many people.

First and foremost, I would like to express my gratitude to Mrs Frances Ferreira, at the time COL's Education Specialist for Innovative/Open Schooling, whose determination to find answers to questions about value for money was the driving force behind this report. Sincere thanks go out to Frances for her ongoing support over the years.

I also want to register my appreciation for the work of Ms Carol Walker, Programme Assistant at COL's headquarters. She was tireless in responding to my requests for information, and her good humour throughout made the process enjoyable. This report would not have been possible without her many contributions.

Thanks must also go out to all of the staff members and students of the open schooling programmes in Vanuatu and Belize who took part in the online surveys. I want to send a special word of appreciation to Mr Glenden Llaisa and Mr George Mael Toka, who have been responsible for the overall development of open schooling on behalf of the Vanuatu Ministry of Education and Training. I am also sincerely grateful for the input I received from Dr Lorna McKay, the Principal of Gwen Lizarraga High School and also of its evening division (GLED).

Last, but by no means least, I want to register a big "thank you" for the contribution of Dr Maxine McKay at the University of Belize. Without all her hard work behind the scenes to provide me with detailed information about the open schooling programme at GLED, I could not have brought this report to a successful conclusion.

Abbreviations and Acronyms

AY	Academic year
BER	Basic efficiency resource, an alternative approach to classical cost–benefit analysis
BMoEYS	Ministry of Education, Youth and Sport, Government of Belize
CAD	Canadian dollar(s)
CBA	Cost–benefit analysis
CEA	Cost-effectiveness analysis
COL	Commonwealth of Learning
CSEC	Caribbean Secondary Education Certificate, the terminal examination for Form IV (Grade 11) students in Belize
DfID	Department for International Development, UK Government
FVDES	Fraser Valley Distance Education School, Chilliwack, British Columbia, Canada
FY	Financial year (which may differ depending on jurisdiction and institution)
GLED	Gwen Lizarraga High School – Evening Division, Belize
GLOS	Gwen Lizarraga Open Schooling Programme, based at GLED
GoB	Government of Belize
GPI	Gender parity index, calculated by dividing the number of female students in a particular grade or level of schooling by the number of male students. A GPI of less than 1.00 indicates under-representation of girls and young women in education.
GRV	Government of the Republic of Vanuatu
ICT	Information and communication technologies
I&E	Income and expenditure
MfDR	Managing for development results
NGO(s)	Non-governmental organisation(s)
OER	Open educational resources
OS	Open schooling
PPP USD	Purchasing power parity in United States dollar(s)
RBM	Results-based management
SROI	Social return on investment, an alternative to classical methodologies for cost–benefit analysis
VfM	Value for money
VMoET	Ministry of Education and Training, Government of the Republic of Vanuatu

Glossary of Terms¹

Cost allocation

The process of determining which cost elements can reasonably be associated with a particular input or process/activity and then attaching or accounting for those costs. Where costs are shared between two or more processes/activities, then it is necessary to decide what proportion should be attached to each.

Deadweight

In the social return on investment methodology, this term refers to the amount of a particular outcome or benefit that would have happened even if the process/activity had not taken place.

Discounting

The process by which costs incurred and financial benefits accrued at different times are recalculated to reflect common, present-day values.

Discount rate

The notional rate used to discount future costs and benefits to a present value.

Displacement

An assessment of how much of a particular outcome has displaced or substituted for other outcomes.

Drop-off

An estimate of how much a particular impact will decline over time so that it no longer benefits participants.

Duration

How long (in years) an outcome lasts after the intervention or activity has taken place. For example, if finding employment is one of the planned outcomes of a particular programme, the length of time a participant remains in that job is the duration of the outcome.

Financial model

A set of relationships between financial variables that allow the effects of changes to variables to be tested.

Financial proxy

An approximation of the value of a particular input, output, outcome or impact where an exact measure is impossible to obtain.

Impacts

The results expected to be achieved over the longer term of an intervention programme. In the SROI model, an impact is defined as the difference between the outcome for participants, taking into account what would have happened anyway, the contribution of other interventions and the length of time the outcome lasts.

Impact map

A matrix or table that summarises how a programme's inputs can make a difference in the lives of beneficiaries. In other words, it traces how resources are used to support processes/activities that then lead to particular outcomes for different stakeholders.

Inputs

The human, financial and other resources devoted to achieving programme/project objectives. Inputs are the contributions made by each stakeholder that are necessary for a process or activity to happen.

Materiality

Information is considered to be "material" if its omission has the potential to affect decisions by stakeholders or readers of a document.

Monetise

To assign a money value to something.

Net present value

The value in today's terms of benefits that are expected to accrue in the future, minus the discounted investment required to support the processes/activities that generate those benefits.

Net social return

This is calculated by dividing the net present value of a particular impact or benefit by the total amount of monetised resources required to achieve it.

Outcomes

The changes expected from the various programme initiatives that are expected to contribute to the achievement of the desired impact results. From the perspective of stakeholders, outcomes can be either intended or unintended and may be either positive or negative.

Outputs

The measurable and tangible changes that result directly from programme activities and the expenditure of related resources that are expected to lead to the desired outcomes.

Processes (activities)

Actions taken or work performed through which inputs (such as funds, technical assistance and other types of resources) are mobilised to produce specific outputs.

Sensitivity analysis

A process by which the assumptions underlying a financial or SROI analysis can be tested and the impact of changing the variables embedded in these assumptions can be assessed.

Stakeholders

All of the people, organisations or other entities that experience change, whether positive or negative, as a result of the intervention or programme that is the subject of analysis.

Sunk costs

Any expenditure on goods and services that has already been incurred and is thus considered irrevocable.

Executive Summary

Between 2012 and 2015, the Commonwealth of Learning (COL) provided financial support and other inputs for a range of processes/activities that were intended to promote the establishment of new open schooling (OS) programmes in Vanuatu and Belize, amongst several other countries. In order to evaluate the impact of these interventions and to assist in the process of implementing plans for the period 2015–2021, COL’s Education Specialist for Innovative/Open Schooling commissioned an ex post value for money (VfM) review of these activities. A consultant with expertise in costs and financing of open schools was contracted to design and carry out this study. This document is the main output of this consultancy, providing an overview of the VfM review process and summarising its findings.

The first section discusses COL’s approach to programme planning, the processes/activities that were included under the OS component of COL’s *Three-Year Plan for 2012–2015* and the outcomes that were anticipated. A formative evaluation had already been undertaken to assess the adequacy of certain elements contained in the OS component of this plan, including some of the activities that form the subject of this VfM review. Whilst this formative evaluation drew positive conclusions with regard to the efficiency and effectiveness of many of the processes/activities under consideration, no objectively verifiable evidence was presented for quantifying the outcomes or impacts.

Section 2 of this report describes stages in the process of conducting a VfM review and possible objectives for such an exercise. The challenges faced by researchers when attempting to establish the value of educational outcomes are also discussed, particularly in relation to indirect, non-market benefits and other externalities, which are often overlooked in traditional cost–benefit analyses. The methodologies used for VfM analysis have been criticised from a number of perspectives, and the potential pitfalls of this approach are discussed. At the same time, by adopting such methods, development agencies can enhance accountability by attaching values to the non-market impacts of the interventions they support and provide convincing arguments for options that produce the best value for money.

The following section considers the various models and methodologies that were used in this study. The first part outlines the steps used to carry out a conventional VfM analysis. However, given the concerns about the perceived shortcomings of this method and the difficulty of establishing the monetary values of outcomes and impacts, two alternative approaches were also adopted. The basic efficiency resource (BER) model provides an assessment of the relative efficiency of different processes/activities by plotting participants’ perceptions of their impact against the investment required to achieve such outcomes. The social return on investment (SROI) methodology was chosen as a means of identifying, documenting and (attempting to) value benefits, particularly those that were not anticipated during the planning stage. The next part of Section 3 of this report includes a list of the quantitative indicators that were sought for use in this research, as well as the outcomes of the search for such data. The section concludes with a description of the various research instruments that were developed to collect information for subsequent analysis.

Section 4 provides details of the methods and data sources used to estimate costs and to value benefits, as well as the assumptions that underlie these projections. These raw monetary values need to be adjusted for technical reasons, and the calculations to convert values to PPP USD, to account for inflation, to depreciate fixed assets and to discount inputs, outputs and outcomes to their present values are also explained. Since the findings of any VfM analysis are highly dependent upon the data used and the assumptions made, the process of sensitivity analysis to test the validity of these elements and their vulnerability to unanticipated changes in the future is also discussed.

The following section of this report provides overviews of the OS programmes in Vanuatu and Belize, including summaries of the processes/activities supported by COL. The programme in Vanuatu is an initiative of the Ministry of Education and Training (VMoET) that aims to address the needs of adolescents who either drop out or are pushed out of conventional schools before completing Year 10. Whilst the process of developing paper-based ODL materials was underway, the OS programme was launched in March 2014 at three schools. Students took part in afternoon or evening classes, supplemented by photocopied texts. COL has funded various activities to build capacity to plan the OS programme, develop study materials and provide support to learners at partner schools across Vanuatu.

In Belize, the OS programmes is hosted by the Gwen Lizarraga High School, a senior secondary education institution supported by the Ministry of Education, Youth and Sports (BMoEYS). For many years, the Evening Division at this school (GLED) has offered face-to-face classes for out-of-school youths. However, beginning in 2012, with support from COL, GLED staff began the process of developing online study materials for students to use as an alternative to attending classes on a daily basis. Section 5 of this report presents the findings of online surveys of staff members and students in each of these countries, with limited interpretation.

The following section considers issues related to economy, efficiency and cost-efficiency. It begins with a discussion of the differences between these terms and illustrates this with comparisons between the OS programmes and conventional schooling in the two countries under review. Whilst the open schools in both jurisdictions are more economical in terms of producing educational inputs, they are not necessarily as efficient at producing secondary school graduates. Nevertheless, both OS programmes are more cost-efficient than classroom-based education. In Vanuatu, the OS programme is able to produce Grade 10 examination passes at between 33 per cent and 93 per cent of the costs at conventional Anglophone schools. In Belize, the GLED OS programme produces high school “graduates” at about 21 per cent of the amount spent at other senior secondary schools.

Sub-section 6.2 presents an analysis of the unit costs of COL-financed activities and the relative economy of different ways of procuring equivalent inputs. The BER methodology was then applied to assess the relative efficiency of these activities in producing outputs. Cost-efficiency quotients were also calculated, and the findings of these two exercises are presented in sub-sections 6.3 and 6.4. In general, the most cost-efficient activities were scholarships for existing eLearning courses at academic institutions, online webinars and web-based peer-to-peer interactions. Workshops organised on the site of the open school itself and facilitated by local experts or COL staff members

also had high cost-efficiency quotients. Regional or international workshops facilitated by outside experts tend to incur relatively high unit costs without necessarily producing greater outputs. This section of the report concludes with a discussion of the limitations of these types of analysis.

Effectiveness and cost-effectiveness are the focus of Section 7. The online questionnaires documented a range of positive (and negative) outcomes for OS students in Vanuatu and Belize. These changes can be grouped into a number of different categories: enhanced learning experience, improved employment prospects, improved health for students and their child(ren), improved family and social relationships, as well as monetary benefits. However, because of the absence of comparable data about outcomes arising from conventional education systems, it is difficult to draw any firm conclusions about the relative effectiveness and cost-effectiveness of the open schooling programmes in these two countries.

Likewise, responses to the staff questionnaires document a range of positive changes for OS teachers who took part in COL-funded capacity-building processes/activities, and these are discussed in subsection 7.2. These benefits include increased professional motivation, improved teaching practice and greater confidence in the use of ICT. The results of the BER analysis suggest which activities were most effective in producing these outcomes. However, because of the difficulty in linking particular benefits with a single process/activity, it was not possible to carry out a hard-and-fast assessment of their relative effectiveness. Likewise, in the absence of financial proxies and relevant data to establish the value of outcomes and benefits, the cost-effectiveness of different interventions proved difficult to establish.

Section 8 of this report is devoted to an overall cost-benefit analysis of the processes/activities financed by COL to support the development of new OS programmes in the two countries during the three-year period under review. Using the SROI methodology, two key measures were calculated to represent the relationship between costs and benefits: the net present value (NPV) and the SROI ratio. Since no financial proxy was found to estimate the value of the earnings premium enjoyed by Grade 10 completers in Vanuatu, which is the principle direct benefit of further schooling, no meaningful NPV or SROI ratio could be calculated for this country. However, it was estimated that the OS programme at GLED will generate PPP USD 21.6 million in NPV for the Belize economy over a ten-year period. The SROI ratio was almost 8.6 to 1.0 for this programme, meaning that for every Belize dollar invested in GLED, more than eight and a half Belize dollars of value will be generated for students and the country as a whole. A sensitivity analysis of these findings was conducted, and it determined that they are robust and capable of surviving significant changes in the underlying assumptions used in the calculations.

The concluding section of this report revisits the five questions posed at the beginning of the Introduction and utilises the findings of this study to provide answers. COL's investment was found to have yielded impressive returns, though the benefits cannot be attributed solely to inputs provided by COL. Other stakeholders (students, teachers and other staff members, as well as national ministries of education) are also making significant contributions. As a proportion of the total inputs required to sustain the OS programmes until 2023, COL's contribution to date amounts to roughly 1.4 per cent in Vanuatu and approximately 4.0 per cent in Belize. For every Canadian dollar that COL has invested so far in the OS programme at GLED, it is estimated that

more than 200 Canadian dollars of value will be generated over a ten-year period.

In addition to the positive benefits summarised above, there were a number of unexpected negative outcomes. Very small numbers of student respondents indicated that studying had caused them to lose or give up a job, that they feel more isolated from their peers when studying at a distance, and that they experience increased stress trying to balance the demands of studying with their other responsibilities. Two staff respondents indicated that they were dissatisfied because of the amount of work required to implement the OS programme and the belief that they were not adequately compensated for changes in their conditions of service. Significant numbers of both students and staff indicated that they have had to spend more money since the OS programme was introduced. However, much of this additional spending seems to be associated with the purchase of personal laptops or similar devices that are being used to enhance the teaching and learning processes.

Several recommendations were made to ensure that the OS programmes in Vanuatu are sustainable and to improve implementation of COL's plans for future interventions in this field:

1. Because of concerns that the two OS programmes under review may currently be operating with significant deficits, it would be advisable for COL to insist that potential partners produce detailed income and expenditure projections before making any commitment to support the establishment of a new open school.
2. The findings of this review should be used to lobby the respective ministries of education to provide increased financial support for the OS programmes in these two countries. There is also scope for building upon the existing programmes to expand access to secondary schooling in both Vanuatu and Belize, which should result in even greater cost-efficiency through economies of scale.
3. Partnership agreements between COL and local implementing institutions should specify the types of data that will need to be provided to facilitate efficient monitoring and evaluation. If this is done at the planning stage, it will enable partners and/or national governments to put in place the systems required to collect, compile and report relevant information in a consistent way.
4. Likewise, COL should devise a standard means of recording basic data on workshops or other activities it supports financially, including standardised, quantitative feedback from participants about their perceptions of the outcomes.

TABLE OF CONTENTS

Terms of Reference	i
Acknowledgements	ii
Abbreviations and Acronyms	iii
Glossary of Terms	iv
Executive Summary	vi
List of Figures	xiii
List of Tables	xiii
INTRODUCTION	2
SECTION 1: COL's Supports for Open Schooling	4
1.1 COL's approach to programme planning	4
1.2 The OS programme in COL's three-year strategic plan	5
1.3 Formative evaluation of components of COL's OS programme	6
SECTION 2: The Value for Money Approach	8
2.1 The process of conducting a VfM review	8
2.2 Objectives of a VfM analysis	10
2.3 Establishing the value of education	10
2.4 Critiques of the VfM approach	13
2.5 Advantages of adopting a VfM approach	14
SECTION 3: Models and Methodologies	16
3.1 The classical approach to VfM analysis	16
3.2 Valuing outputs, outcomes and impacts	17
3.2.1 The basic efficiency resource model	17
3.2.2 The social return on investment approach	18
3.3 Metrics required for this VfM review	21
3.4 Research instruments	23
SECTION 4: Quantifying Costs and Valuing Benefits	25
4.1 Estimating costs	25

4.1.1 Expenditure by COL	25
4.1.2 Projected income and expenditure for OS programmes in Vanuatu and Belize	26
4.1.3 Other estimated costs	27
4.2 Valuing benefits	28
4.3 Adjusting the values of costs and benefits	29
4.4 Sensitivity analysis	32
SECTION 5: Outputs, Outcomes and Impacts	34
5.1 Vanuatu OS programme	34
5.1.1 Specific outputs of COL-supported activities	35
5.1.2 Findings of staff survey – Vanuatu	36
5.1.3 Findings of student survey – Vanuatu	37
5.2 Belize OS programme at GLED	39
5.2.1 Specific outputs of COL-supported interventions – Belize	40
5.2.2 Findings of staff survey – Belize	42
5.2.3 Findings of student survey – Belize	44
SECTION 6: Economy, Efficiency and Cost-Efficiency	47
6.1 Differences between economy, efficiency and cost-efficiency	46
6.2 Unit cost analysis of activities supported by COL	49
6.3 Efficiency of COL-supported activities	51
6.4 Cost-efficiency of COL-supported activities	53
6.5 Limitations of this analysis	54
SECTION 7: Effectiveness and Cost-Effectiveness	55
7.1 Effectiveness and cost-effectiveness of OS programmes in Vanuatu and Belize	55
7.2 Effectiveness of COL-supported initiatives	58
7.3 Effectiveness in improving equity	59
7.4 Cost-effectiveness of COL-supported initiatives	59
7.5 Limitations of effectiveness and cost-effectiveness analysis	60

SECTION 8: Cost-Benefit Analysis	62
8.1 SROI analysis of costs and benefits	62
8.1.1 SROI ratio for OS programme – Vanuatu	62
8.1.2 SROI ratio for OS programme – Belize	62
8.2 Sensitivity and break-even analyses	63
8.2.1 OS programme – Vanuatu	63
8.2.2 GLED OS programme – Belize	63
8.3 Limitations of cost-benefit analysis	66
CONCLUSIONS AND RECOMMENDATIONS	67
Recommendations	69
REFERENCES	71

List of Figures

Figure 1. Levels of the results chain in a logical framework	4
Figure 2. Overview of COL’s supports for open schooling	5
Figure 3. DfID’s approach to VfM analysis	8
Figure 4. Total net benefits of education	11
Figure 5. Conceptual model of BER analysis	18
Figure 6. BER diagram of participants’ perceptions of the relative impact and relative investment associated with COL-funded inputs	52
Figure 7. Cost-efficiency quotients of COL-supported activities	53

List of Tables

Table 1. Stakeholders for the SROI analysis	20
Table 2. Metrics sought for the VfM analysis	21
Table 3. Vanuatu OS programme: Student enrolments and “graduates,” AY 2014	34
Table 4. Vanuatu: COL-supported activities and outputs, FYs 2012/13–2014/15	35
Table 5. Belize OS programme: GLED student enrolments and “graduates,” AYs 2011/12–2014/15	40
Table 6. Belize: COL-supported activities and outputs, 2012–2015	41
Table 7. Economy, efficiency and cost-efficiency of Os programmes relative to conventional schooling in Vanuatu and Belize	48
Table 8. Unit costs of col-supported activities (PPP USD) in Vanuatu and Belize	50
Table 9. Summary of outcomes for open school staff members (% of respondents to survey) in Vanuatu and Belize	56
Table 10. Summary of outcomes for open school students (% of respondents to survey) in Vanuatu and Belize	57

INTRODUCTION

As part of the process of preparing its Strategic Plan for the six-year period 2015/16 to 2021/22, the Commonwealth of Learning (COL) decided to carry out a value for money (VfM) review of interventions undertaken during the preceding planning period. In particular, COL's Education Specialist for Innovative/Open Schooling wanted to evaluate the costs and benefits of various supports provided from her budget for new/emerging open schools in Belize, Pakistan, Trinidad & Tobago and Vanuatu.

This VfM review was intended to provide answers to the following questions:

- What impact have these supports had to date?
- Do the long-term benefits of these interventions outweigh the costs and, if so, to what extent?
- Have the initiatives supported by COL resulted in outcomes and impacts apart from those that were expected?
- Have these outcomes/impacts been positive or negative for the ultimate beneficiaries (i.e., learners taking part in open schooling programmes, staff in such institutions, parent ministries)?
- What are the most cost-efficient and cost-effective ways of supporting the development of open schooling throughout the Commonwealth of Nations?

A consultant with expertise in analysing the costs and benefits of education programmes was engaged to carry out this study. Unfortunately, the initiatives in Pakistan and Trinidad & Tobago were still at a very early stage of development. After studying the existing documentation, the consultant concluded that there were insufficient data for a VfM review of the COL-funded activities in these two countries. Accordingly, it was agreed that the project would go ahead with an analysis of the value for money achieved for all interventions to support the establishment of open schooling (OS) programmes only in Vanuatu and Belize.

The review proceeded in a number of stages. First, the consultant prepared a *Concept Document*, outlining various models of VfM analysis and their limitations, explaining the process and metrics required, and presenting proposals for carrying out the task. This *Concept Document* was circulated to all stakeholders for review and comment before the main study commenced.

In the interim, staff at COL's headquarters in Vancouver provided details of the organisation's expenditure on different inputs, as well as reports and other documentation about the workshops and other activities it funded. Because the budget for this exercise did not provide for international travel, the consultant drew up a detailed list of questions about the OS programmes in the two countries under review. These were circulated to managers and administrators, who were asked to provide written responses. Additional data were obtained via email exchanges and Skype interviews to clarify outstanding issues. This information formed the basis for framing the analysis of inputs and outputs.

In order to assess the perceptions of managers, administrators, materials developers, tutors/ teachers and other staff from Vanuatu and Belize who took part in the COL-funded activities, online questionnaires were prepared on the Survey Monkey platform. Similar questionnaires were also prepared to enable the ultimate beneficiaries of these OS programmes — past and present students — to assess the impact that returning to education has had on their lives. In situations where potential respondents did not have access to an Internet-linked computer, paper copies of the survey instrument were used to collect data.

Unfortunately, by the time these questionnaires were finalised, the OS programmes in both countries were in abeyance because of school holidays. This meant that it was difficult to contact both staff and students so that they could fill in the questionnaires. As a result, the response rate was somewhat disappointing and the time frame for the VfM review, which was originally expected to conclude by mid-July, had to be extended. This document is the main output of this consultancy, providing an overview of the VfM review process and summarising its findings.

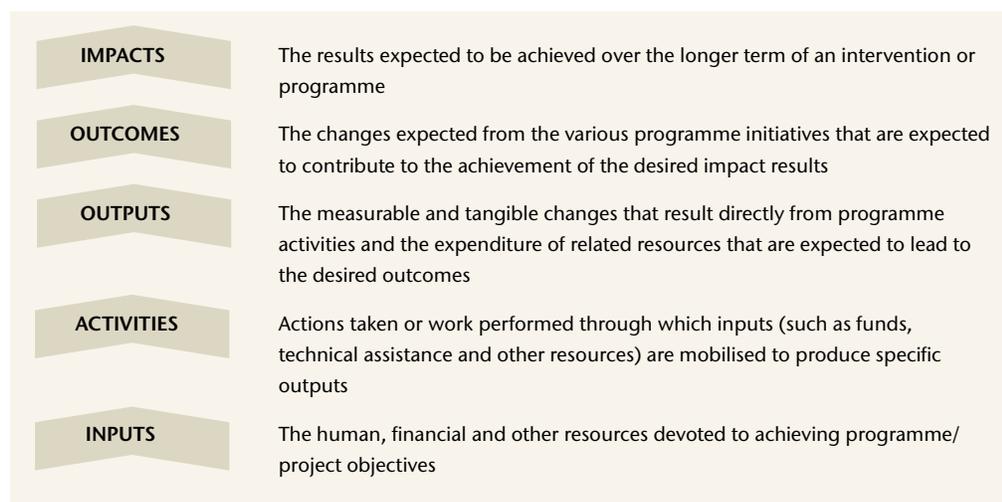
SECTION 1: COL'S SUPPORTS FOR OPEN SCHOOLING

The mission of the Commonwealth of Learning is to help member governments expand the scale, efficiency and quality of learning by using appropriate technologies, particularly those that support open and distance learning (ODL). Since COL's establishment in 1987, *open and innovative schooling* has been a key focus of its development initiatives. COL defines open schooling (OS) as “the physical separation of the school learner from the teacher, and the use of unconventional teaching methodologies and information and communications technologies.” Between 2012 and 2015, OS was one of four components of COL's programme for the education sector.²

1.1 COL's approach to programme planning

Since the first decade of the 21st century, COL has been developing and refining its systems for planning, overseeing, monitoring and evaluating the interventions it supports in co-operation with national governments and local development partners in countries of the Commonwealth of Nations. Based on the shared experiences of participants in this process over the years, COL has devised a methodology that is modelled upon the results-based management approach. This model emphasises defining and verifying results, capturing relevant data for evidence-based reporting and enhancing the organisation's ability to assess and describe programme impacts. .³

Figure 1. Levels of the results chain in a logical framework



Source: Farrell (2009), *Results-Based Monitoring and Evaluation at COL*, p. 40, Table 2.

As part of its commitment to results-based management, the Commonwealth of Learning has adopted a traditional logical framework (log frame) approach for monitoring and evaluating its initiatives. Conceptually, a log frame is underpinned by a logic model, which describes a chain of intended results, the activities that will be undertaken to achieve those results and the resources required to support those activities.⁴ This results chain comprises a number of levels, as illustrated in Figure 1.

The diagram suggests a unilinear process, with a single input resulting in a chain comprising a single output, a single outcome and a single impact. In reality, however, most programmes involve a range

of inputs and activities or processes, often from a variety of stakeholders, all contributing to a single over-arching impact. Conversely, a single input (e.g., a training workshop for teaching staff) may result in a range of outcomes and impacts for an entirely different group of beneficiaries (students taking part in OS programmes).

This is particularly true of the initiatives supported by COL, which enable national governments and local education providers to deliver services to the ultimate beneficiaries. The COL-funded inputs typically aim to support capacity building or organisational development. The intermediate outcomes of such activities feed into a separate results chain by improving the inputs provided to students (e.g., self-instructional materials), leading to a new set of outputs (e.g., examination passes), outcomes (e.g., enhanced employment prospects) and impacts (e.g., higher earnings). The impacts experienced by the ultimate beneficiaries may be realised only after a period of years.

The complex nature of the results chain for the COL-supported activities under review, which included various outcome levels and multiple stages, posed particular challenges for researchers undertaking a VfM review of the organisation’s initiatives.

1.2 The OS programme in COL’s three-year strategic plan

In line with the results-based management approach adopted by COL, a three-year strategic plan was drawn up for the period 2012–2015. The OS element of this document is summarised in Figure 2.

Figure 2. Overview of COL’s supports for open schooling

Open Schooling	Strategic Plan 2012–2015
<p>IMPACT STATEMENT</p> <p>A sustainable and equitable increase in the number of Commonwealth citizens acquiring the knowledge and skills for leading productive and healthy lives, through formal and non-formal open and distance learning opportunities.</p> <p>Vision: To be the foremost global agency that promotes learning for development.</p> <p>Mission: To help governments and institutions to expand the scale, quality and efficiency of learning by using ODL.</p> <p>Core Strategies: Partnerships, capacity, materials, models and policy.</p>	<p>STRATEGIC OBJECTIVES AND GOALS</p> <p>ACTIVITIES</p> <ul style="list-style-type: none"> • Establishing new open schools • Materials development in technical and vocational subjects • Capacity building to ensure integration of ICT and OER • Policy and system development and implementation • Innovation for girls’ education <p>MONITORING AND EVALUATION (PARTICIPATORY)</p> <p>Formative: Use data to enhance effectiveness and efficiency of implementation strategy</p> <p>Summative: Progress towards achievement of longer-term results. Use data to inform stakeholders on their intermediate and long-term results and to identify lessons learned.</p>
<p>COMPETITIVE ADVANTAGE</p> <p>Networks / Collaboration / Resource Development / Policies and Strategies / Motivated Partners / Resources / Track Record of Success</p>	<p>OUTPUTS</p> <ul style="list-style-type: none"> • Increased access through open schools established. • Technical and vocational subjects developed through collaboration in COMOSA. • Enhanced capacity amongst policymakers and ODL practitioners to ensure sustainable open schools. • Increased access to learning opportunities through policies and systems adopted. • Innovative and improved accessibility to quality education for marginalised girls through appropriate curricula and technology.
<p>OPEN SCHOOLING STRATEGIES</p> <p>How we will get there:</p> <p>Partnership / Material Capacity</p> <p>Risks: Political Stability / Change Management</p>	<p>OPEN SCHOOLING OUTCOME</p> <p>More learners, particularly girls, have access to quality learning opportunities at the secondary level through the introduction and expansion of open schooling.</p> <p>KEY PERFORMANCE INDICATORS</p> <ul style="list-style-type: none"> • Four additional countries establish new OS to expand access to equitable learning opportunities for girls and boys. • Ten existing OS substantially increase enrollment and performance by adopting new gender-sensitive policies and systems. • At least ten OS introduce five new vocational and five new technical subjects to attract learners who would otherwise be excluded. • Ten adopt and use OER. <p>COUNTRIES</p> <p>Australia, Bahamas, Bangladesh, Belize, Botswana, Cameroon, Canada, Ghana, India, Kenya, Kiribati, Lesotho, Mozambique, Namibia, Nigeria, Pakistan, Seychelles, Solomon Islands, Sri Lanka, Swaziland, Tanzania, Tonga, Trinidad & Tobago, Zambia</p>

As indicated in the top centre block under the heading “Strategic Objectives and Goals,” the activities envisaged to support the development of OS can be divided into five components:

- Establishing new open schools
- Materials development in technical and vocational subjects
- Capacity building to ensure integration of ICT and OER
- Policy and system development and implementation
- Innovation for girls’ education

Each of these components received a separate budgetary allocation, which was converted into inputs that generated a series of activities/processes over the three-year planning period. Nevertheless, all of these had the potential to contribute to the first component — that is, the establishment of new OS programmes. For this reason, it would create conceptual difficulties if an attempt were made to separate the activities/processes delivered under the other components from those devoted to achieving the first objective.

1.3 Formative evaluation of components of COL’s OS programme

COL commissioned a formative evaluation of the activities/processes that contribute to the strategic objective of building capacity for open schools to integrate technology and open educational resources (OER).⁵ Several of the activities evaluated took place in Belize, whilst staff working with the OS programmes in both Belize* and Vanuatu took part in other activities[†], including the e-Learning Certificate programme through the Open Polytechnic of New Zealand and the Open Schooling Connect community learning network platform. This formative evaluation involved a desk review of documents provided by COL, plus questionnaires circulated to participants in the various activities under review (principally, staff in institutions with OS programmes).

The final report of this formative evaluation found that these activities were relevant, valid and closely aligned with the selected strategic objective from COL’s *Three-Year Plan for 2012–2015*. The document concludes:

Overall the projects [i.e., activities] are directly linked with building capacity but also [with] sustaining that capacity and building a community of support and learning for the beneficiaries.⁶

In addition, the researcher attempted to evaluate the efficiency and effectiveness of these activities in producing the planned outputs and outcomes. However, these attempts were constrained by low response rates to questionnaires and to other requests for information from those who took

*These activities included: a workshop on online platforms and planning for study materials, follow-up training delivered by Mrs Frances Ferreira on materials development, the twinning project between Gwen Lizarraga High School – Evening Division and the Fraser Valley Distance Education School, and workshops on capacity building for online content, facilitated by NotesMaster.

part. Nevertheless, the documentary review indicated that the planned outputs for all but two of the activities had been completed by October 2014. The efficiency in transforming inputs to outputs was judged by the evaluator to be “excellent,” principally because of the organisation and support from COL. The effectiveness of all of the activities was found to be “clear, relevant and in line with participants’ capacity.”⁷ Whilst the qualitative approach adopted for this evaluation facilitated the gathering of in-depth insights into the strengths and weaknesses of the various activities, unfortunately it did not provide any objectively verifiable evidence for quantifying efficiency and effectiveness.

The formative evaluation discussed above covered only some of the elements that constitute the subject of this VfM review. However, the current study took into account all of the inputs and activities provided through the COL Open Schooling Programme that contributed to the establishment of new open schools in Vanuatu and Belize during the three-year period ending on 30 June 2015.[‡] In addition, staff from GLED took part in a number of workshops on gender mainstreaming that were funded through a separate line item in COL’s budget. However, as it would be impossible to isolate the outcomes and impacts of these workshops from those of other capacity-building initiatives that supported the development of the OS programme in Belize, they have also been included in this analysis. All of these activities are summarised in Tables 4 and 6 in Section 5 of this report.

[†]The latter activities included the eLearning Certificate programme delivered by the Open Polytechnic of New Zealand, and the Open Schooling Connect community learning network platform.

[‡]COL’s financial year ends on 30 June. Where the financial and academic years in other jurisdictions and institutions differed from COL’s, calculations were made to re-align data on outputs, income and expenditure to the COL financial year in order to ensure comparability.

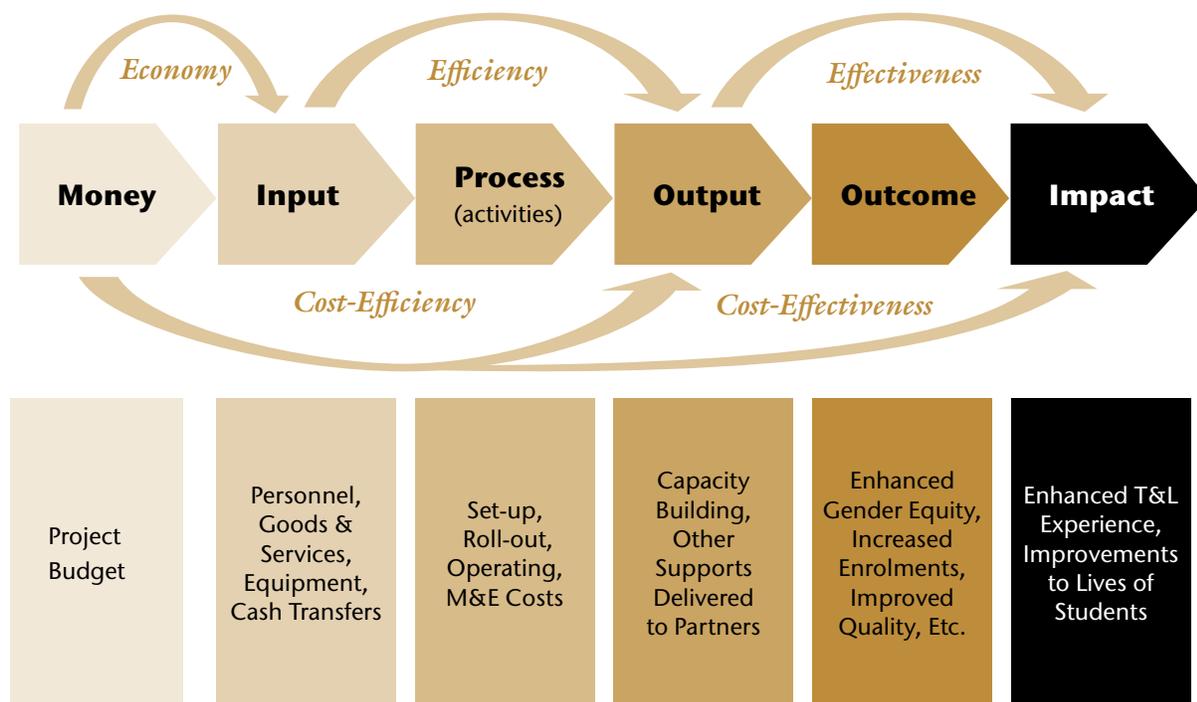
SECTION 2: THE VALUE FOR MONEY APPROACH

In recent decades, many countries have instituted a process of expenditure review for government departments, agencies and state-funded bodies in order to ensure that the general public receives the best value for monies expended from the public purse. For example, the National Audit Office of the UK Government, one of the strongest advocates of this approach, defines VfM as “the optimal use of resources to achieve intended outcomes.”⁸ In many cases, a VfM analysis is undertaken to evaluate the impact of a particular project or programme, but it is also used during public procurement processes to help in the selection of the best alternative from a range of options for delivering services or constructing infrastructure.

2.1 The process of conducting a VfM review

The procedures for carrying out a VfM review differ from country to country, but they all follow a similar approach. One of the best articulated methods is that prescribed by the Department for International Development (DfID) of the UK Government. DfID has adopted a model for VfM analysis that utilises elements of the results/value chain embodied in the log frame approach. This model analyses the financial costs and benefits associated with a programme’s inputs, activities/processes, outputs, outcomes and impacts, as illustrated in Figure 3.

Figure 3. DfID’s approach to VfM analysis



Adapted from Hodges et.al. (2001) Figure 1, p. 5.

Central to the debate surrounding VfM is what constitutes “value,” how it should be measured and what it means to different stakeholders.⁹ The valuation of an intervention can be conducted at the level of inputs, activities/processes, outputs, outcomes or impacts. Each of these is increasingly difficult to measure but also increasingly informative about the “value” of the intervention.

The DfID model adopts what is called a “3E framework” as the conceptual basis for its approach to VfM. Essentially, the 3E framework is an expenditure review that focuses on:

- **Economy** – This term refers to the price at which inputs of appropriate quality (agency staff, consultants, goods and services, capital equipment, etc.) are procured.
- **Efficiency** – This is related to the rate at which inputs are converted into outputs (or deliverables) through programme processes or activities.
- **Effectiveness** – This term can be defined as the extent to which programme outputs are translated into outcomes and impacts.

However, when various levels of the results/value chain are examined in light of the cost of achieving them, two additional terms are used:

- **Cost-efficiency** goes beyond a determination of simple efficiency (the ratio of useful outputs to total inputs) to examine the relationship between expenditure (the value of staff time, money and other resources invested) on programme inputs and the value of programme outputs.
- **Cost-effectiveness** refers to the value of resources expended to achieve actual programme outcomes and impacts.¹⁰

When measuring the comparative value of a project’s impact, two approaches can be adopted. A cost–benefit analysis (CBA) is generally used as an ex ante (before inception) tool to evaluate different alternatives for delivering a service or providing infrastructure. A typical CBA examines the relative costs and benefits for one or more proposed interventions against the counterfactual or “do nothing” option to determine which approach is likely to achieve the best ratio of outcomes/impacts to inputs.

The alternative approach — cost-effectiveness analysis (CEA) — is distinguished from CBA by the treatment of benefits. In a CBA, a monetary value is placed on both costs and benefits, whilst in a CEA benefits can be quantified in a non-monetary way. CEA compares the costs of alternative ways of providing similar kinds of outcomes, and it is used to identify the cheapest way of achieving that outcome — e.g., by comparing the cost per unit of output/outcome/impact across a range of options. CEA is appropriate in cases where the benefits are difficult to quantify in monetary terms but is more limited in the use that can be made of the resulting analysis.¹¹

If it is not possible to collect reliable evidence or to devise credible assumptions about the monetary value of anticipated benefits, then a rigorous CEA is always more useful than a poorly supported CBA.¹²

2.2 Objectives of a VfM analysis

A VfM review or analysis typically aims to achieve one of two goals:

- **Ex ante option appraisal** – This use of VfM enables donors and service providers to assess the costs and respective benefits of alternative approaches to achieving a desired impact. On the basis of such an appraisal, the most cost-effective option can be selected before the project commences.
- **Ex post evaluation** – VfM reviews are also used after a programme/project has run its course in order to demonstrate to funding bodies, managers in the implementing body, development partners and other stakeholders that funds have been expended in a way that creates significant value for the ultimate beneficiaries. This approach supports an evaluation of the cost-effectiveness of a particular programme or project.

By conducting regular VfM analyses, donors, implementing agencies and development partners will also have a better understanding and appreciation of costs and results. This is important to ensure that they can make more informed, evidence-based choices, as part of the process of continuous improvement in programme/project planning, monitoring and evaluation.

When measuring the comparative value of a project's impact, two approaches can be adopted. A cost benefit analysis (CBA) can be used either as an ex ante (before inception) tool to appraise different alternatives for delivering a service or providing infrastructure, or as an ex post approach to evaluate the impact of an activity or programme that has already been implemented. A typical CBA examines the relative costs and benefits for one or more interventions against the counterfactual or “do-nothing” option, to determine which approach is likely to achieve or has already achieved the best ratio of outcomes/impacts to inputs.

The alternative approach — cost-effectiveness analysis (CEA) — is distinguished from CBA by the treatment of benefits. In a CBA, a monetary value is placed on both costs and benefits, while in a CEA, benefits can be quantified in a non-monetary way. CEA compares the costs of alternative ways of providing the same or similar kinds of outcomes, and it is used to identify the cheapest way of achieving a particular outcome (e.g., by comparing the cost per unit of output/outcome/impact across a range of options).

Typically, CEA is used during the planning phase to appraise various options for achieving a pre-defined set of outcomes. However, it may also be used as an ex post evaluation tool, provided that comparative data are available on the cost of achieving the same or similar outcomes through alternative means. For example, the cost-effectiveness of an open school can be assessed by comparing the expenditure it incurs to produce a Grade 12 “graduate” with the unit costs at conventional schools.

CEA is appropriate in cases where the benefits are difficult to quantify in monetary terms, but it is more limited in the use that can be made of the resulting analysis. If it is not possible to collect reliable evidence or to devise credible assumptions about the monetary value of anticipated benefits, then a rigorous CEA is always more useful than a poorly supported CBA.

Because this study involved an assessment of actual costs and actual outputs, outcomes and impacts at the end of COL’s three-year development plan for 2012–2015, it represents an ex post evaluation of costs, benefits and cost-effectiveness. However, since the time horizon used for the calculations was ten years, this should be considered an interim evaluation of the VfM that will eventually be achieved by these interventions.

2.3 Establishing the value of education

One of the biggest challenges faced by those undertaking any VfM analysis is identifying suitable metrics to account for outcomes and impacts that are normally not quantified in monetary terms. This problem is particularly acute in the education sector.

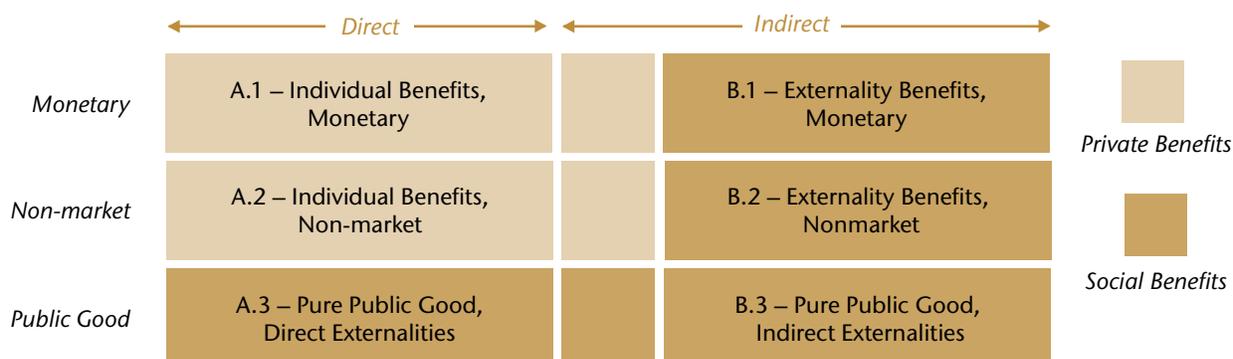
In a review of the literature, McMahon¹³ identifies a number of different ways in which the benefits of education have been classified. Positive returns on investment in education can be either *direct* or *indirect*, depending upon how clearly the output or impact can be linked with the input. In addition, benefits can be characterised as:

- *monetary* – returns that can be measured in terms of money;
- *non-market* – identifiable benefits that arise outside the workplace or labour market; and
- *public good* – more general effects that contribute to the improved welfare of individuals or society as a whole.

Combining these approaches for classifying the benefits of education produces the schema shown in Figure 4.

Investment in education has traditionally been justified on the basis of both private and public (or social) returns.¹⁴ The direct monetary benefits for individuals (cell A.1 in Figure 4) are the most comprehensively studied and best understood. Typically, the annual salaries and lifetime earnings of individual workers increase for every level of education that they complete, though the labour market tends to pay a premium for relatively scarce qualifications. In other words, once a majority of job applicants have attained a particular qualification (e.g., a senior secondary school-leaving certificate), its value will decrease.

Figure 4. Total net benefits of education



Adapted from MacMahon, “The Social and External Benefits of Education,” p. 215, Figure 6.1.

Employers also receive monetary benefits from a more highly educated workforce, as do the families of individual workers, though these outcomes are indirect. Likewise, there are direct and indirect benefits arising from education during the time that people spend in household production outside the labour market. For example, heads of household with higher levels of education tend to seek medical attention when they or their children fall ill, thus enjoying better health. However, these non-market gains can be classified as private benefits, as they provide advantages for individuals, their families or their employers rather than for society as a whole. All of the private returns on investment in education are highlighted with light-coloured shading in Figure 4.

Governments also contribute to the costs of education in the expectation that it will benefit the wider community by aiding in the attainment of national and international development goals. Such benefits are referred to as externalities, and some can be measured in monetary terms. For example, additional years of schooling produce indirect, monetary results by raising a country's gross domestic product (corresponding to cell B.1 in Figure 4), and this effect may account for as much as 45 per cent of the total benefits of investing in education.¹⁵ A recent study suggests that for each additional year in the average duration of education amongst a country's population, output per capita increases by roughly nine per cent. "Moreover, greater equality in the accumulation of human capital has an additional and significant positive effect on economic growth."¹⁶ Increased participation and retention of girls and young women in education will drive greater representation of females in a country's labour force, contribute to an increased share of part-time employment, and lead to higher rates of GNP growth.¹⁷

Other outcomes are non-monetary — public returns from investment in education that contribute to the improved well-being of others in society, both now and in the future.¹⁸ The direct impact of education on the public good (cell A.3) can also be measured in terms of its contribution to national research and development capacity and the take-up of new technologies. Lower levels of poverty, increased social equity, improved public health and increased political stability have been advanced as examples of indirect, non-monetary benefits (cells B.2 and B.3). All of these can be classified as the social returns on investment in education (dark-coloured shading in Figure 4).

However, the problem with traditional economic approaches to a return-on-investment or VfM analysis is their tendency to focus on advantages that can be measured in monetary terms. For example, McMahon notes:

*Standard estimates of social rates of return include only a portion of the total social effects of education. They are limited to the market (or monetary) returns and do not include the non-market private or the non-market externality benefits of education.*¹⁹

By failing to account for a range of externalities that are difficult or impossible to reduce to monetary terms, such studies underestimate the full social returns on investment in education. In many cases, the benefits to wider society equal or exceed the private gains for individuals, their families and *their* employers.

2.4 Critiques of the VfM approach

Criticisms have been levelled against the VfM approach from many quarters, particularly by non-governmental organisations affected by its inclusion as a requirement for funding by governments or international development agencies. The following objections have been raised:

Development is a non-linear process – In many cases, it is difficult to identify and attribute the underlying causes of changes arising from development projects, particularly those involving human attitudes and behaviour. The logic models underpinning the log frame approach are based on the assumption that social change and human development follows a linear chain of causality and results. In fact, the pathway is often circuitous, involving many contributing factors and progressing in a stop-and-start fashion.²⁰

Difficulty in identifying all impacts – Often, it is difficult to isolate the contribution of an intervention to outcomes and impacts, which makes the identification of the value of a particular initiative a complex undertaking. In addition, many development projects lead to unanticipated results, which may have either positive or negative impacts on the intended beneficiaries. By contrast, the typical VfM analysis focuses on the planned outputs, outcomes and impacts of a particular programme/project, without taking into consideration the overall situation of beneficiaries in a holistic context.

“Tyranny of indicators” – This phrase refers to the persistent bias amongst many funding bodies towards quantitative methods for obtaining “hard” data about objectively verifiable indicators. However, as the former head of the United States Agency for International Development has argued:

*Those development programs that are most precisely and easily measured are the least transformational, and those programs that are most transformational are the least measurable.*²¹

Interventions with less measurable impacts (such as institution building or policy development/reform) tend to be crowded out by those that yield measurable results (mainly in service delivery areas).²² As a result, focusing exclusively on the preferred option identified by a VfM analysis may overlook potentially more beneficial programme/project designs.

Short-term versus long-term perspectives – Likewise, because most development projects involve short- or medium-term interventions, there is a risk of focusing on short-term outputs at the expense of long-term sustainable change. It has also been argued that an overemphasis on VfM analysis to appraise options creates a culture of risk aversion and stifles innovation on the part of NGOs, development partners and other service providers.²³

Prioritising the low-hanging fruit – Similarly, the VfM approach may inadvertently lead to greater emphasis being placed on providing aid to beneficiaries that are easier to reach. If the primary focus of a VfM analysis is to minimise the cost of interventions, certain groups may be excluded from the scope of a particular programme/project because their geographical location, political status

or other factors make it more difficult, and therefore more expensive, to address their needs.²⁴ Since NGOs and local development partners operate in a competitive environment for attracting funds, there is a risk that the application of the VfM concept will result in a shift in the allocation of resources away from complex, transformative and innovative programmes to easy, well-known and more quantifiable initiatives.²⁵

Accountability to beneficiaries as well as to funders – Downward accountability refers to the process of engaging with beneficiaries in evaluating outcomes and impacts. It is generally acknowledged that many development programmes/projects lack effective mechanisms for this. The current discourse on VfM seems to have a strong focus on increasing accountability to donors rather than beneficiaries.²⁶ Complying with these accountability requirements not only costs money that could have been used for programme/project inputs, but also dominates the time allocations of those staff responsible for management and administration.²⁷

Lack of complete and reliable data – Even the authors of the DfID Value for Money Toolkit acknowledge that reliable and up-to-date data will rarely be accessible to supply all the metrics required for a comprehensive analysis. For this reason, it is recommended that the types of data required be specified at the preparation and planning stages and that systems be put in place by either the partner body or national governments to collect and compile relevant information in a consistent way.²⁸ If such data are not available, then a rigorous VfM analysis may not be possible.

2.5 Advantages of adopting a VfM approach

Notwithstanding the shortcomings of the VfM model, its proponents argue that it also presents a number of potential advantages. Principal amongst these are:

Recognising the value of non-market outputs/impacts – Because certain results of development initiatives have not traditionally been monetised, there is a danger that they will be undervalued. Adopting a systematic approach that assigns credible monetary values to such outputs and impacts enables their worth to be more easily demonstrated. As Olivier Vardakoulias of the New Economics Foundation argues:

*Monetising things gives them a value. Better said, monetisation reveals the value of elements that are not reflected in the market price system. Without doing it, without taking these into account in investment decisions, the implicit value we give to non-market goods is zero.*²⁹

By failing to place a monetary value on less tangible outputs and impacts we are implicitly saying that they are not important and should not be considered when making decisions about the allocation of resources. Most NGOs and local development partners strongly contest this perspective.

Providing arguments for the best-value, rather than the cheapest, option – A VfM review is intended not just to minimise costs, but also to achieve long-term, sustainable results and maximise the impact of each dollar/pound/euro spent on the lives of the ultimate beneficiaries.³⁰ By carrying out such an analysis during the planning phase of a programme/project, the most cost-efficient and cost-effective options will be adopted, and these should provide the greatest benefit for the targeted group.

Enhancing accountability – The VfM approach also provides opportunities for NGOs or implementing agencies to justify what else represents “value” from their perspective and to improve ways of measuring it. Whilst VfM can lead to less downward accountability, it may also do just to the opposite by challenging NGOs to engage actively in promoting the voices of beneficiaries in defining and measuring value. In addition to the ethical imperative to engage with local stakeholders, such consultations can increase the effectiveness, appropriateness, ownership and sustainability of development interventions. Although NGOs may express concern about yet another layer of administrative burden, VfM is finally an opportunity to enhance organisational efficiency and improve systems for monitoring and evaluation.³¹

SECTION 3: MODELS AND METHODOLOGIES

Insofar as possible, this review attempted to employ the classical model of a VfM analysis. However, in view of the difficulties associated with assigning monetary values to educational outcomes (described in sub-section 2.3 above) and the lack of data for valuing inputs and benefits (discussed in the following section), alternative approaches were sought. The BER model was adopted in order to assess the relative efficiency of COL-supported activities, since the monetary value of outputs could not be credibly established. In order to identify the range of benefits (many of which are impossible to monetise) that accrue to students taking part in the OS programmes in Vanuatu and Belize, an attempt was made to employ the SROI model. These models and methodologies are discussed in this section.

3.1 The classical approach to VfM analysis

As prescribed by the UK's DfID, an *ex post* VfM analysis involves a number of stages or steps, as outlined below:

- A. identifying costs incurred by the implementing agency, including: development or set-up costs, operational costs, and monitoring and evaluation costs;
- B. identifying costs incurred by development partners to take part in the project activities, including: those costs outlined in step A above, direct costs of implementing the project, as well as indirect costs (especially staff time devoted to the project that could have been used for other things);
- C. identifying “other” costs, including: any costs incurred by the ultimate beneficiaries of the project (e.g., student fees), political costs (e.g., time devoted to lobbying/advocacy for OS), costs associated with peripheral or unintended project impacts (e.g., negative effects on the environment) and costs of any envisaged scaling-up of activities after the project's completion (e.g., expenditure to implement a full OS programme);
- D. carrying out an analysis of economy in the procurement of project inputs;
- E. measuring or estimating the quantifiable benefits of the project and assigning them a credible monetary value based on available data and justifiable assumptions;
- F. identifying and assessing other project outputs and impacts that are unquantifiable;
- G. carrying out an analysis of cost-efficiency to (i) determine the relative efficiency and associated expenditure to convert monetary inputs into outputs and (ii) compare with international benchmarks (where available);
- H. analysing cost-effectiveness to determine the relative effectiveness and associated expenditure to convert monetary inputs into outcomes and impacts, whilst showing consideration of critical cost-effectiveness drivers;
- I. where the wider benefits of the project can be credibly monetised, carrying out a cost-benefit analysis;

- J. where cost metrics and outcome/impact indicators have not been built into the project's monitoring and evaluation (M&E) framework, recommending M&E measures for a continuation of the project and for future interventions;
- K. assessing any provisions that may have been made to ensure the financial sustainability of the project after supports from the implementing agency have been withdrawn, and estimating such costs (or revising these estimates if they have already been included in the original project proposal).

Further details of how costs and benefits were valued, including the data sources available and the calculations used to adjust monetary data to standardised values, are given in the following section of this report.

3.2 Valuing outputs, outcomes and impacts

As a result of the concerns raised in sub-section 2.4 above about the perceived shortcomings of the VfM model, NGOs and other implementing agencies have been experimenting with alternative approaches to measuring and valuing the benefits of development interventions. These innovative methods are of particular importance in helping to recognise the value of impacts that are difficult to document in monetary terms.

3.2.1 The basic efficiency resource model

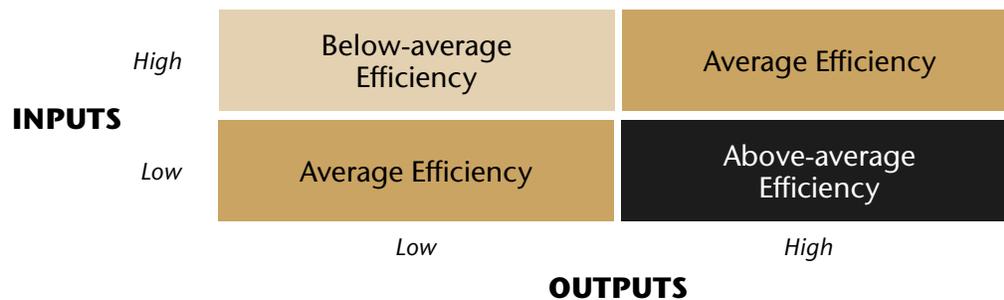
The basic efficiency resource (BER) approach offers a common-sense framework for evaluating complex programmes, campaigns or activities that involve multiple components. The BER model weighs stakeholders' perceptions of the value of inputs against outcomes and uses a comparative perspective to determine the relative efficiency of different activities/processes. It builds on the key principles of the SROI approach (see sub-section 3.2.2 below) to involve stakeholders in identifying and evaluating the outputs of different interventions compared to the resources expended on implementing them. Finally, BER provides a relative assessment of performance, where the components analysed are judged in comparison to other components at the same level in the results chain.³²

Building on stakeholders' assessments of outcomes, soft or perceived values, and long-term effects, BER is able to measure what matters. It is also a very cost-effective technique as it only uses data that are already available or that can be generated through consultations with stakeholders. However, the qualitative nature of the BER approach imposes limits on the comparability of the measurements derived by participants and on measuring the contribution of the intervention. The technique is generally very suitable for measuring the VfM of interventions that are otherwise difficult to quantify.³³

The BER methodology typically uses a matrix divided into four quadrants to summarise all information in a simple and visible way. This conceptual framework is illustrated in Figure 5. A component process/activity that requires a high level of inputs but produces a high level of outputs is deemed to achieve "average efficiency" in the BER model. Similarly, a process/activity with low

inputs and low outputs is also deemed to achieve “average efficiency.” However, where a process/activity can be delivered with a relatively low level of inputs but results in a high level of outputs, it is classified as achieving “above average efficiency.” Conversely, a component with a high input and low output is deemed “below average.”³⁴

Figure 5. Conceptual model of BER analysis



Source: Cugelman and Otero, *Basic Efficiency Resource*, p. 3, Table 1.

In order to conduct a BER analysis, evaluators need to collect three pieces of information:

- a list of all the processes/activities that will be evaluated;
- a measure of inputs (determined in discussions with stakeholders); and
- a measure of outputs (also defined in consultation with stakeholders).

How the processes/activities, inputs and outputs are defined will vary from one evaluation study to another, depending upon the feedback received from stakeholders about the most suitable metrics.³⁵

For this particular study, the BER model was adopted to evaluate the relative efficiency of the different activities that COL has sponsored to build capacity amongst OS practitioners in Vanuatu and Belize. However, because the project budget did not make provision for direct consultations with stakeholders, the input and output measures were defined by the author, based on recommendations in a paper produced by Cugelman and Otero (2010). Unfortunately, the descriptors used on the Likert scale for input indicators appeared to cause some confusion, and this is discussed in sub-section 6.3.

3.2.2 The social return on investment approach

Social return on investment refers to a family of methods that have been developed to investigate benefits in relation to the social, environmental and economic outcomes of developmental interventions. These methods first emerged at the beginning of the 21st century and have been promoted by the New Economics Foundation and by Social Value UK (formerly the SROI Network).

The SROI approach is particularly useful for identifying, documenting and valuing benefits that

have not been anticipated or planned. For example, a 2011 SROI study of the higher education sub-sector in the UK demonstrated the significant contribution that universities make to (i) strengthen the glue that holds society together, (ii) provide cultural facilities for the wider community and (iii) raise the aspirations of children and young people. The impact of the higher education sub-sector goes beyond the obvious outcomes of developing human capital and upskilling the national labour force; in addition to this planned impact, universities in the UK deliver on wider policy objectives related to health, citizenship, community cohesion and social mobility.³⁶ Fujiwara adopted a similar approach to study the benefits of participation in adult learning activities in the UK. His findings indicate that adult education programmes have significant positive effects on four domains of individual well-being: health, employability, social relationships and the likelihood of undertaking volunteer work.³⁷ Fujiwara's research was used to define some of the broad outcomes that formed the focus for in-depth exploration in this present study.

The core principles of the SROI model include:

- involving stakeholders,
- understanding what changes (from the stakeholders' perspective),
- valuing the things that matter,
- only including what is material,
- avoiding claims that cannot be substantiated, and
- being transparent and verifying results.³⁸

The assessment of value in an SROI analysis is based on the perceptions and experiences of the beneficiaries.

The SROI Network's *Guide to Social Return on Investment* suggests a six-stage process³⁹ for such studies:

1. ***Establishing the scope*** of the evaluation, identifying stakeholders and deciding how to involve them.
2. ***Creating an impact map*** that records all inputs, clarifies outputs, describes outcomes, documents impacts, and illustrates the relationships between them.
3. ***Generating evidence of outcomes*** by developing outcome indicators, collecting data on outcomes, establishing how long outcomes last and placing a value on those outcomes.
4. ***Establishing impacts*** — After monetising outcomes, it is necessary to eliminate those changes that came about as a result of other factors or that would have happened even if the intervention had never taken place.
5. ***Calculating the SROI Ratio*** involves adding up all the benefits, subtracting any negative outcomes and comparing this value to the investment made by all stakeholders.

6. *Reporting, validating and embedding findings* in order to share the lessons learnt with stakeholders, verify their accuracy, respond to any concerns that arise and ensure that good practices are integrated in policies and future plans.⁴⁰

In many cases, however, the lack of robust data renders SROI unfeasible, whilst the results can be criticised as subjective because of the way financial proxies are attached to qualitative indicators. In such circumstances, the main benefit of this approach appears to lie in the process itself rather than its end product.⁴¹

Notwithstanding these potential limitations, the SROI methodology was adopted for this VfM review in order to engage beneficiaries in a process of identifying, documenting and valuing the benefits they experience. In relation to the first stage of the SROI process, the scope of this study has already been outlined in the Introduction section of this report. In addition, it is necessary to identify the stakeholders — all of the people and institutions that experienced material change as a result of project activities. The stakeholders of the COL-supported activities in Vanuatu and Belize are shown in Table 1, along with the rationale for including them. Unfortunately, it was not feasible to include some of these stakeholders comprehensively with the time and resources allocated for this SROI exercise.

Table 1. Stakeholders for the SROI analysis

Key Stakeholders	Rationale/Reasons for Inclusion (or Exclusion)
Students	These are the direct beneficiaries of the OS programmes developed with support from COL.
Tutors/Teaching Staff at OS Institutions	This is the target group for many of the COL-supported activities that are intended to build capacity to deliver effective OS programmes. The interventions may also have an impact on their duties and conditions of service. In addition, teaching staff have regular contact with students and are thus in a position to assess the outcomes experienced by the ultimate beneficiaries.
Managers/ Administrators	These persons also take part in COL-supported activities. Their involvement is essential because they have the greatest influence in terms of fine-tuning the OS programme and planning future developments.
Ministry Officials	Where these persons are directly engaged in developing an OS programme, their involvement in the SROI review is essential to ensure future support. They may also play a key role in planning further developments.
COL Staff	These stakeholders are responsible for planning activities and managing inputs.
COL's Funders	The views of these stakeholders were not sought during this SROI review. Although they provide financing for the initiatives undertaken by COL, they are not directly involved in planning the funded activities.
Family Members	It was not practical to consult with students' families in the time available.

The remaining stages of the SROI process are described in the following sections of this report.

3.3 Metrics required for this VfM review

A variety of quantitative data are required to carry out any VfM review, particularly when the goals and objectives for a particular set of interventions are broadly defined, as is the case in COL's *Three-Year Plan*. The indicators sought for use in this VfM review are outlined in Table 2, along with a description of the status of the consultant's efforts to obtain the necessary data.

Table 2. Metrics sought for the VfM analysis

Indicator	Metric/Data Source	Cost/Value Measure	Status of Search
INPUTS			
Set-up Costs (fixed and one-off)	COL's financial management system	CAD amounts	Included in breakdown of expenditure by FY provided by COL staff.
Roll-out Costs (semi-variable and recurrent)	Accounts of implementing partners in Vanuatu and Belize	Amounts in local currency	Detailed accounts were not available, though some data were provided in summary form.
Overheads: COL	COL's Finance, Administration and Human Resources Department	CAD amounts	Included in estimates for COL staff time, but business-sustaining costs (general overheads) were not available.
Monitoring and Evaluation Costs	Data abstracted from COL's financial management system	CAD amounts	Included in breakdown of COL expenditure by FY.
Direct Costs: COL	COL's financial management system	CAD amounts	Included in breakdown of COL expenditure by FY.
Direct Costs: Partners	Budgets/accounts of implementing partners	Amounts in local currency	Notional cost estimates received from Vanuatu. Summary costs by major division received from Belize for one FY only.
Cost of Staff Time: COL	Formula developed by COL's Finance, Administration and Human Resources Department	CAD amounts	Notional estimates received.
Cost of Consultants	COL's financial management system	CAD amounts	Included in breakdown of COL expenditure by FY.
Cost of Staff Time: Partners	Estimate of time (days or weeks) or percentage of work time devoted by named staff	Amounts in local currency	Not available for Vanuatu. Provided by Belize in summary form.
Cost of Staff Time: Twinning Bodies	Estimate of time (days or weeks) or percentage of work time devoted by named staff	Amounts in local currency	No attempt was made to obtain these data from FVDES because of time constraints.
Subsistence and Travel for COL Staff (international)	COL's Finance, Administration and Human Resources Department	CAD amounts by year	Requested but not pursued because of difficulty in apportioning such costs to specific activities.
Subsistence and Travel for Participants (international)	COL's financial management system	CAD amounts by year	Included in breakdown of COL's expenditure by FY.
Subsistence and Travel (in-country)	In-country travel costs provided by partners	Amounts in local currency by year	Detailed breakdown provided for Vanuatu. No data for Belize, but likely to be minimal.
Other Costs: Beneficiaries	Fees and other charges collected from students	Amounts in local currency	Notional amounts provided by partners, but detailed accounts not available.

Indicator	Metric/Data Source	Cost/Value Measure	Status of Search
Other Costs/Benefits: Political	Levels of concern about unemployed youth or those not engaged in productive sectors	Non-monetary assessment of need/demand for further training for out-of-school youths	No data found.
Other Costs/Benefits: Social or Environmental	National studies of employment opportunities/capacity of economy to absorb additional graduates with secondary qualifications	Non-monetary assessment of enhanced employability	No data for Vanuatu. Statistics on employment rates by level of educational attainment obtained for September 2014 Labour Force Survey in Belize.
Other Costs: Future Scale-up	Up-skilling and/or capital costs of conversion to full-scale operations (e.g., development of additional subjects or grade levels, employment of additional tutors)	Estimated amounts in local currency	Included in projections of income and expenditure generated by the consultant for the OS programmes in Vanuatu and Belize.
OUTPUTS			
Capacity-building Workshops	Number of participant-days of training received by staff from partner bodies	Cost per participant-day	Calculated for COL-supported activities.
ODL Materials	Number of units (modules, booklets, subjects) developed	Cost per unit	Not calculated — of questionable relevance because there is no standardised unit of output.
OUTCOMES			
New OS Programmes Established	Number of new OS programmes in operation	Non-monetary assessment	Case-study summaries for Vanuatu and Belize provided in Section 5.
Learners	Number of additional learners taking part in OS programmes	Cost per student per year	Included in I&E projections prepared by the consultant.
“Graduates”	Number of additional students who successfully complete OS programmes	Cost per “graduate” by programme	Calculated by the consultant, summarised in Table 7.
IMPACTS			
Earning Potential	Increase in starting salaries and/or lifetime earnings for graduates/completers of OS programmes	Difference in average earnings for those with secondary education	No data for Vanuatu. Statistics on median monthly earnings by level of educational attainment obtained from 2014 Labour Force Survey in Belize.
Gender Balance	Breakdown by gender of additional learners taking part in OS programmes	GPI of enrolments in OS programmes compared to GPI for corresponding level in traditional schools	Partial data on gender of OS students received from partners in Vanuatu and Belize. Statistical reports also obtained from education ministry websites in each country.
Benefits for Women/Girls	National or regional studies on benefits of additional years of schooling for girls/women	Possible monetary benefits in PPP USD	No data found.
Equity in Education	Number of learners taking part in OS programme compared to total potential market and/or number of out-of-school youths	Non-monetary assessment of impact in reaching the target groups	Data obtained for Vanuatu and Belize from various publications downloaded from government websites.

Indicator	Metric/Data Source	Cost/Value Measure	Status of Search
IMPACTS			
Basic Efficiency Resource	Online questionnaire for OS staff to obtain their perceptions	Determination of relative efficiency	Summary of responses can be found in Section 5 of this report. BER analysis is shown in Figure 6.
Social Return on Investment	Online questionnaires for learners enrolled in OS programmes with implementing partners	Assessment of monetary and non-monetary impacts	Summary of responses can be found in Section 5.
NATIONAL, REGIONAL AND INTERNATIONAL COMPARISONS/BENCHMARKS			
Unit Costs of Providing Education	Public spending on secondary education, divided by number of learners in conventional schools	Unit cost per learner in local currency	Data for both Vanuatu and Belize obtained from budget documents and education statistics reports.

In general, records of project/programme inputs were more complete, as such information was contained in activity reports and institutional accounts. The financial data needed to establish the inputs funded through COL's budget were readily available, but comparable information about the costs that have been and will be incurred by development partners in Vanuatu and Belize was more difficult to come by. The same documentation was used to quantify outputs of COL-funded activities, though further clarification through email exchanges was required. As discussed below, questionnaires were used to obtain information from staff and students of the OS programmes in question on the perceived outcomes of these initiatives.

When considering how to measure the monetary benefits of these activities, it was not immediately clear what metrics could be used and which of them would be available. However, where activities supported the development of new or emerging open schools, some indicators proved useful. For example, the unit costs of educating students through non-conventional means was compared with the costs of traditional schooling to provide an indication of the relative savings (or additional expenditure incurred) by national governments and students or their families.

3.4 Research instruments

Since no provision was made for international travel in the budget for this assignment, the consultant attempted to make face-to-face contact with key stakeholders via Skype. These attempts were only partially successful, due to differences in the time zones for the parties and limited bandwidth. Accordingly, lists of questions were drawn up for managers/administrators of the OS programmes in Vanuatu and Belize to obtain operational details, to verify understandings drawn from the consultant's review of project documents and to solicit statistics on enrolments and graduations. These questions were put into MS Word documents distributed as email attachments. Managers/administrators responded to the questions using Track Changes, then returned the files to the consultant. Supplementary question lists were used to obtain additional information when clarification was required, as well as to solicit further details for the income and expenditure projections (see sub-section 4.1).

In the absence of a viable means for holding virtual consultations with other staff members and students, a number of online questionnaires were drawn up by the consultant and hosted on the Survey Monkey platform. Separate questionnaires were created for past and present OS students and for staff at the respective institutions, whilst the questionnaires for each of the two survey locations were customised to include details specific to that country.

The instruments for surveying staff included a total of between 11 and 13 questions, though many of these contained a number of supplementary items or follow-up questions. The survey instrument opened with three questions to determine how long respondents had been working with the OS programme, their gender and their age. The second section included items that allowed respondents to rate the impact of COL-supported activities, as well as the amount of time, effort and resources invested in each; these ratings were subsequently used for the BER analysis (see sub-section 6.3). The following questions focused on the staff member's assessment of the impact of the OS programme on students. Respondents were also asked to assess the impact of the OS programme on their professional practice.* The concluding section of the survey instrument for staff asked them to indicate whether they had experienced any financial impact as a result of the introduction of the OS programme. The questionnaire closed with one final open-ended item, asking respondents whether there was anything else they wanted to say about the OS programme. Responses were anonymous, as there was no place on the questionnaire for recording a respondent's name. In addition, all of the questions were phrased in as neutral and balanced a way as possible so that respondents would not be subtly discouraged from identifying any negative impacts. A copy of the staff questionnaire for GLED is included in Appendix A.

The instruments for surveying past and present students contained 20 or 21 questions. The opening section required respondents to provide some basic demographic information (age and gender), as well as to indicate when they had started and completed their studies.† This was followed by a series of items to assess the impact of the OS programme on their experience of learning. The following section asked students about their employment status and whether completing their studies had (or would have) any effect on their prospects and earning potential. The next block of four questions sought to discover whether respondents had experienced any changes in their health or the health of their child(ren), if they had any. This was followed by a series of items asking similar questions about their social and family relationships. The penultimate section of the questionnaire asked about the financial implications of studying, whilst the questionnaire concluded with the same open-ended question used in the instrument for collecting staff feedback. A copy of the student questionnaire for Vanuatu is included in Appendix B of this report.

* The staff questionnaire for Belize included two additional questions in this section. As well as being asked about changes in their teaching practice and attitudes towards their work, respondents at GLED were asked about changes in their time commitment and use of ICT since online materials had been introduced.

† The questionnaire for GLED students included an additional item requesting respondents to describe their ethnic background. This question was included on the recommendation of an academic at the University of Belize who had acted as a mentor for this project.

SECTION 4:

QUANTIFYING COSTS AND VALUING BENEFITS

In order to reflect the opportunity costs of alternative uses of a particular set of resources, it is necessary to appraise the full economic costs of all options, net of any expected revenues. Likewise, where possible, it is desirable to place a monetary value on the outcomes of any intervention so that the ratio of benefits to costs can be established. This approach also enables sensitivity analysis to be conducted.

A number of assumptions need to be made in simulating projected cost and benefit streams. These must be explicitly backed up by concrete evidence from the country in question (e.g., programme evaluations, national surveys or published research) and from regional and international comparisons. Such evidence must be scrutinised and assessed for its relevance, quality and reliability.

This section describes the methods used to estimate the costs associated with the establishment of new OS programmes in Vanuatu and Belize, as well as the sources used to generate these data. The general approach adopted for quantifying the value of benefits is also discussed. This is followed by details of the calculations used to adjust these monetary values to facilitate international comparisons. The section closes with a description of sensitivity analysis and the reasons for conducting such tests.

4.1 Estimating costs

The cost structure of a typical OS programme differs from that of conventional education in that considerable fixed costs are incurred for developing self-instructional materials before any learners enrol for studies. However, in most cases, savings can be made on variable and semi-variable (or stepped) cost because OS learners have less face-to-face contact with tutors/teachers than their classroom-based counterparts. In order to become more cost-efficient than conventional schools, OS institutions must exploit potential economies of scale by spreading their up-front costs over a large number of students for the life of the materials. Likewise, because the inputs provided by COL are primarily intended to assist in the development or start-up phase of programmes or institutions that are expected to run on a self-sustaining basis for an indefinite period, it is essential to consider the potential impacts over several years.

4.1.1 Expenditure by COL

The evidence used to calculate COL's financial contribution to these initiatives was provided by administrators at COL's headquarters in Vancouver, based on information from its financial management system. COL's Education Specialist for Open Schooling estimated the percentage of her work time and that of the programme assistant over the last three years that was devoted to these two initiatives, and this was converted to a Canadian dollar value using a formula developed by COL to allocate the costs of staff time and associated overheads to different activities. However, COL as a rule does not apportion overheads for management or service departments to its component activities, and no data on such costs were included in this analysis.

4.1.2 Projected income and expenditure for OS programmes in Vanuatu and Belize

As one of its capacity-building activities since 2007, COL has organised a number of workshops for managers and administrators to develop their understanding of the principles underlying the cost structure of open schools. Participants received digital copies of an automated spreadsheet tool that was created by the consultant to assist in projecting future income and expenditure (I&E) for new OS courses or programmes, and this tool was used in practical exercises throughout each workshop. Several participants from Vanuatu attended such a workshop in that country, and the Principal of GLED took part in a similar workshop in Barbados.

Despite this training and the tool provided at these workshops, it appears as if no such I&E projections were prepared prior to the introduction of new OS programmes in these two countries. Accordingly, the consultant was obliged to carry out this task.

Because different cost components behave in different ways over the life of a course or programme, the tool includes separate worksheets to calculate the following:

- Projected student numbers
- Income from student fees
- Income from other sources
- Costs of market research, feasibility studies and capacity building
- Materials development costs
- Course presentation costs
- Projected expenditure to provide learning materials for students
- Course delivery costs
- General institutional overheads or business-sustaining costs

The results of the calculations in these subsidiary worksheets are compiled on a single worksheet that summarises the financial projections for the life of the course/programme. A separate sheet presents an annual profit–loss (surplus–deficit) projection.

In line with the principles articulated in the *Green Book* published by the UK Treasury,⁴² costs and benefits were projected over a ten-year period in order to cover the lifetime of assets (e.g., study materials) produced during the course of the activity. The summary worksheets of the projections for Vanuatu and Belize are shown in Appendices C and D, respectively.

The assumptions used to prepare these ten-year projections are also shown in the appendices. These assumptions were based upon information supplied by managers/administrators in these two countries, as well as the consultant’s extensive experience of OS projects in Commonwealth countries throughout the Caribbean, Africa, Asia and the Pacific. After the projections were

completed, they were circulated to the OS programme managers/administrators in Vanuatu and Belize for validation.

It is important to note that these projections indicate that *the OS programmes in both Vanuatu and Belize are currently operating with significant deficits and they will continue to do so for the remainder of the ten-year period*. This means that current and projected fees from students and/or documented subsidies from the respective ministries of education are not covering and will not cover the full economic costs of these operations.

This conclusion has been contested by managers at GLED, who argue that the school has more money in its account since the OS programme was introduced and that significant developments have taken place that are also of benefit to students in the day school. It is possible that the assumptions and monetary values used for the projections are inaccurate and require further refinement. A key recommendation of this study is that managers of the OS programmes in both Vanuatu and Belize review these calculations as a matter of urgency.

However, there are several other possible reasons for the disparity between these I&E projections and managers' perceptions of the financial situation:

- The full costs of sustaining the OS programmes may not be apparent in existing accounts. For example, if expenditure on capital equipment, such as a computer server, is not amortized (by setting aside funds from current expenditure each year), it will not be possible to replace such equipment when it comes to the end of its usable life.
- Currently, managers may be making certain savings by compromising on quality standards — for example, by providing fewer contact sessions than planned or having larger class sizes than prescribed.
- The OS programmes may be benefiting from cross-subsidisation from mainstream funding for institutions. For example, in Vanuatu the OS programmes do not make any financial contribution to their host schools for utilities or other consumables. In Belize, the principal of the day high school also manages the OS programme, but the I&E projections did not include a calculation of the value of her time.

None of the above situations is sustainable in the long term. Unless fee levels are increased significantly or alternative sources of funding are found, the continued operation of these OS programmes will be in doubt.

4.1.3 Other estimated costs

Traditionally, “sunk costs” are not included in economic appraisals. The term refers to expenditure on goods and services that has already been incurred and is thus considered irrevocable. For this reason, no values have been attached to the use of existing school buildings by OS programmes after normal hours, nor have such values been used to estimate the costs of conventional schooling for the purpose of comparison.

By extension, this principle supports the argument that the committed costs associated with the employment of staff in government ministries should be excluded, as these would be incurred regardless of which option is selected for the future development of national education systems. In any event, no information was available from the Vanuatu Ministry of Education on the time spent by its staff to develop and manage the OS programme there. However, the cost of employing teachers/tutors at the schools where the OS programme is and will be offered were estimated based upon the number of contact hours and the prescribed rate of payment per hour.

In the case of Belize, the evening division at Gwen Lizarraga High School serves as a national extension programme for adults and out-of-school youths throughout the country who wish to complete their secondary education. The Ministry of Education, Youth and Sports supports the OS programme by paying the fees for a number of students who meet certain criteria for scholarships. However, no documentary information was provided to quantify the level of this financial contribution to GLED. In addition, given the understandable sensitivity about the remuneration of staff, an aggregate figure for salaries at GLED was provided for only a single financial year. For this reason, it was not possible to include cost estimates for the time spent by permanent staff (such as the principal) on this project. Nevertheless, the direct costs of employing tutors and support staff for the OS programme as part of the school's Evening Division were estimated using a figure for hours per week and average hourly wages.

4.2 Valuing benefits

Whilst it proved possible to find quantifiable metrics for most of the outcomes and impacts of these interventions, in many cases there were insufficient data to establish market values accurately and reliably. Whilst determining the full value of benefits such as educational attainment, good health or family stability can be challenging, it should be attempted wherever feasible. Economists can attach a monetary value to non-market benefits by attempting to measure their impact on utility. Utility can be broadly defined as “the satisfaction that a person gets from consumption of a good, or . . . the change in their welfare or well-being.”⁴⁴ Because observing utility directly can be difficult, it is often inferred by studying the choices that people make within related or hypothetical markets.

Recently, economists have attempted to devise more direct, non-market methods for measuring the impact of programmes or projects on life satisfaction, including subjective well-being. Nevertheless, it is likely that some significant impacts of development initiatives can never be monetised in a credible way. In certain cases, these can be quantified using non-monetary units or alternatively described in qualitative terms. The metrics and data sources listed in Table 2 give an indication of how the challenge was addressed for this VfM review. Whatever the case, it is essential that all material costs and benefits, including those that cannot be valued in monetary terms, be taken into account in the presentation of any appraisal or evaluation.⁴⁵

The SROI methodology is useful in mapping many of these non-monetary outcomes and impacts, but finding financial proxies in order to assign monetary values proved extremely difficult. Whilst SROI studies in countries of the global North have access to extensive repositories of socio-economic data, this is not always the case in low-income countries. Despite an extensive web search

of possible sources, no relevant data sets were found to use as financial proxies for most of the mapped outcomes.

However, a special request to the Statistical Institute of Belize yielded a table showing median monthly income by level of educational attainment. This table was generated from data obtained during the September 2014 National Labour Force Survey, conducted by the Statistical Institute of Belize, and it is considered very reliable. Using this information, it was possible to calculate the difference in average annual earnings for those who have completed high school compared to those who have only primary education. This was then used as a financial proxy for the outcomes of completing the OS programme at GLED. No comparable data were found for Vanuatu, so it was not possible to fix a financial proxy for this impact.

In addition, the student and staff surveys asked respondents to estimate the amount per month that they had saved since the OS programme was introduced in their country, as well as the amount of any additional expenditure they had incurred. These estimates were then used to calculate positive and negative impacts per annum over the duration of each programme. Because the reliability of these estimates is questionable, they were subjected to sensitivity and break-even analyses.

Finally, the questionnaire for GLED staff included an item asking respondents whether their total time commitment had changed since the introduction of the OS programme. Those who answered “yes” were asked to estimate how many hours more or less they spent per week. None of the respondents said that they spent less time, whilst 78 per cent indicated that they devoted more time. The estimated average additional hours spent by the affected staff was multiplied by the average hourly wage that GLED pays its part-time teachers, to calculate the value of this input. Again, because it is not known how reliable these estimates are, the effect of including these values in the SROI calculations was tested through sensitivity and break-even analyses.

4.3 Adjusting the values of costs and benefits

In order to ensure the comparability of the cost and benefit measures derived from different sources, periods and jurisdictions, it was necessary to carry out certain calculations to adjust the raw values to standardised units of measurement. A number of different calculations were involved.

Converting to PPP US dollars

During the period under review, there have been considerable fluctuations in the exchange rate between the Canadian dollar, the Vanuatu vatu (VUV) and the Belize dollar (BZD). In addition, the purchasing power of a single currency unit tends to vary from country to country independently from the exchange rate, because of differences in the underlying cost bases and taxation regimes in different economies. For example, the real cost of renting a two-bedroom apartment varies dramatically from place to place. The concept of purchasing power parity (PPP) was devised by economists to enable comparisons between the local prices paid for a standard basket of goods and services. Each year, the World Bank publishes a list of the exchange rates between local currencies in most countries and an internationally standardised PPP in US dollars (USD). Accordingly,

exchange rates obtained from the World Bank website* were used to convert all costs and benefits to PPP USD to facilitate comparison.

Accounting for inflation

In addition, a factor for inflation was included in the projections of income and expenditure prepared by the consultant for the OS programmes in both Vanuatu and Belize. This was done to ensure that the monetary values represent current market prices over the projection period, as this is considered to better reflect social opportunity costs — i.e., the alternative uses to which resources could be put. The percentage figure used for projecting the rate of inflation was derived from government publications in each jurisdiction, showing changes in their respective consumer price indices.

Depreciation

Although not accounted for separately in the automated tool for projecting expenditure on the development of new programmes, depreciation is provided for. The underlying logic in these calculations is that the value of all capital assets (e.g., any investment in developing self-instructional materials, computer hardware, etc.) will decline to zero by the end of the projection period.

Distributional analysis

Many development programmes focus on specific target groups that may be underrepresented or disadvantaged on the basis of gender, income, ethnicity, age, geographical location and/or disability. If such programmes are successful, then the benefits will be experienced differently by different groups in society, and this phenomenon is referred to as “distributional impacts.” In some jurisdictions, a distributional analysis of the impact of any public expenditure programme is required by law to ensure that it does not discriminate against particular groups.

In a classical cost–benefit analysis, the value of impacts may be adjusted on the basis of distributional analysis of the benefits. For example, if a particular intervention generates additional income of CAD 100 per week for each participant, the impact of this outcome will be more significant for those living on their own within a limited budget than for households with children or with higher gross incomes. Accordingly, greater weight may be attributed to outcomes that benefit this particular target group.⁴⁶

The OS programmes in Vanuatu and Belize both target early school-leavers, who typically have lower socio-economic status, and GLED also places special emphasis on enrolling and supporting girls and young women. Accordingly, it would be reasonable to infer that both the direct, individual benefits and the externalities have greater value than for comparable expenditure on educational provision that is not targeted in this way. For example, the impact of a mother completing her secondary education on the health and well-being of her family is likely to be greater in low-income households where no other family member has been educated to this level than in high-income households, where levels of educational attainment tend to be higher.

* World Bank, “PPP conversion factor, private consumption (LCU per international \$),” 2015. Retrieved from <http://data.worldbank.org/indicator/PA.NUS.PRVT.PP>.

The UK Treasury *Green Book* recommends the following:

In principle, each monetary cost and benefit should be weighted according to the relative prosperity of those receiving the benefit or bearing the cost. However, in practice, this information is most unlikely to be available at acceptable cost for many applications... Generally, non-monetary costs and benefits (e.g., life, health, time savings, etc.) are not adjusted as they are considered to be independent of income.⁴⁷

In the absence of any empirical data on the significance of differences in the impacts of the OS programmes, it was not feasible to carry out a distributional analysis or to adjust their values in this study.

Discounting

Discounting is a technique used to compare costs and benefits that occur in different time periods. It is a separate concept from inflation and is based on the principle that, in general, people prefer to receive goods and services now rather than at some time in the future. This phenomenon is referred to by economists as “time preference,” which is a measure of the value an individual or social group attaches to present consumption compared to consumption in the future. For example, a person might invest some of their salary (present consumption) in municipal bonds with a fixed rate of return in the expectation that the value of the investment will accrue so that the funds realised can be used at a later date (future consumption). The real rate of return on such investments can be used as measure of the pure time preference rate.

In order to provide a common basis for comparing costs incurred and benefits accruing at different periods of time, it is necessary to eliminate time preference from the equation. This is done by converting all raw monetary values to their “present values,” using a discount rate.⁴⁸

The UK Treasury *Green Book* recommends using a standard discount rate of 3.5 per cent for programmes with a duration of 30 years or less. However, this figure is based upon data from the UK. The most appropriate discount rate for developing countries may be higher because of higher rates of growth in per capita consumption and greater elasticity of the marginal utility of consumption. However, the effect of these two factors may be offset by increased risk of catastrophe and higher pure time preference for consumption in the present rather than in the future, which also form part of the calculation of the discount rate. The use of alternative discount rates derived from economic data in other countries is recommended for international development projects.⁴⁹ In the absence of detailed analysis of social time preference in Vanuatu and Belize, this study adopted the discount rate prescribed by the UK government.

The factor used to discount costs and benefits may be expressed mathematically as follows:

$$D_n = \frac{1}{(1+r)^n}$$

where

D_n is the discount factor,

r is the discount rate and

n is the number of years.

For example, for an investment of CAD 1,000 now that will result in a payout of CAD 1,500 at the middle of year five, what is the net present value of this investment? The calculation would look like this:

$$\begin{aligned}\text{Net present value of benefit} &= \text{CAD } 1,500 \times 1/(1 + 0.035)^5 \\ &= \text{CAD } 1,500 \times 0.8420 \\ &= \text{CAD } 1,263\end{aligned}$$

Calculating the present value of benefits minus the present value of costs yields the net present value (NPV) of a programme or other intervention. Thus:

$$\begin{aligned}\text{Net present value of investment} &= \text{CAD } 1,263 - \text{CAD } 1,000 \\ &= \text{CAD } 263\end{aligned}$$

If this rate of return reflects the general social time preference, it means that most potential investors would prefer to invest their money in the expectation of receiving benefits valued at CAD 1,500 in five years' time rather than keeping their principal of CAD 1,000 and taking a payout of CAD 263 now. This calculation of social time preference is independent of the effects of inflation on the value of money.

4.4 Sensitivity analysis

Sensitivity analysis is considered a fundamental element of a robust VfM appraisal or evaluation, in order to test the vulnerability of the findings to unavoidable future uncertainties or changes in the variables used. A sensitivity analysis is required to assess the extent to which the results would change if assumptions made during previous stages of the review proved to be inaccurate. Typically, this involves checking:

- estimates of deadweight, displacement, attribution and drop-off;
- financial proxies;
- quantity of outcomes;
- values assigned to non-financial inputs; and
- different discount rates.⁵⁰

The objectives of such a sensitivity analysis are (i) to test which assumptions have the greatest effect on the results in the model and (ii) to determine how much change is required before the SROI ratio falls below the level of one unit of impact/value to one unit of input/investment.

If the units of a particular outcome, impact or benefit can be monetised but not quantified, *break-even analysis* is useful. This technique seeks to answer the question: “How many units of outcome would the intervention need to generate before the value of the benefits outweighed the costs?” An assessment is then made of the likelihood that this break-even point will be reached.⁵¹

The calculation of sensitivity and of the break-even point involves a trial-and-error approach, where values are repeatedly adjusted in an automated spreadsheet to show how much a benefit would need to fall or a cost to rise to reach an SROI ratio of 1.00.⁵² Details of the sensitivity and break-even analyses conducted for this study are discussed in sub-section 8.2 of this report.

SECTION 5: OUTPUTS, OUTCOMES AND IMPACTS

This section presents an overview of the open schooling programmes in Vanuatu and Belize, including summary statistics on enrolments and “graduates.” It also documents the outputs of COL-funded activities and other supports for the establishment of these programmes. The findings of the online surveys for OS staff and students in each country are also summarised. Further analysis and interpretation of these data are presented in subsequent sections of this report.

5.1 Vanuatu OS programme

The open schooling programme in Vanuatu is an initiative of the Ministry of Education and Training (VMoET) that aims to address the needs of roughly 1,800 adolescents who either drop out or are pushed out of conventional schools before completing Year 10, the terminal grade of the junior cycle of secondary education.* Even though self-instructional materials were not yet available, a decision was taken to go ahead with evening classes on a pilot basis at three schools beginning in March 2014. Participating schools photocopied textbooks and other learning materials to supplement these contact sessions. As indicated in the assumptions shown in Appendix C, there were plans to introduce self-instructional materials for at least six subjects at the Year 10 level in both English and French with effect from January 2016.

Table 3. Vanuatu OS Programme: Student enrolments and “graduates,” AY 2014

Centre/School	AY 2014 Enrolments		AY 2014 Completers	
	Total	% Female	Total	% Female
Santo East	14	28.6%	6	50.0%
Centre Ville	18	n/a	16	n/a
Epauto	28	n/a	36	n/a
Totals	60	n/a	36	n/a
Drop-out Rate	40.0%			
Year 10 “graduates”			26	
Graduation Rate	43.3%		72.2%	

As shown in Table 3, a total of 60 students enrolled during the first intake, but only 36 attended regularly throughout the year. Of these, 26 went on to pass the Year 10 examinations in order to qualify for places in Year 11 classes at conventional schools. In future, it is hoped that additional grades at the senior secondary level can be offered through OS methods. The plan is for total student numbers to increase to over 2,200 at three grade levels by 2023.

* The total potential market for open schooling may be much larger than suggested by this figure. Calculations based on data from the 2009 National Population and Housing Census (Figure 86, p. 94) and the VMoET 2013 Annual Statistical Digest (Tables 1-18 and 1-19 on p. 27, and Table 1-21 on p. 29) indicate that almost 7,500 young people between the ages of 12 and 19 are not in school. As many as 69,000 Ni-Vanuatu 15 years of age and older have completed primary school but have not completed their secondary education.

5.1.1 Specific outputs of COL-supported activities

Several COL-financed workshops and meetings took place during 2012 and 2013 to promote the OS concept and to build capacity for planning and learner support. However, the process of developing self-instructional booklets only began in January 2014 and is ongoing.

A total of 5,313 participant hours of planning and capacity-building activities have been supported by COL. Statistics provided by VMoET indicate that a total of 24 teachers have taken part in training workshops, but this does not include all of the participants who attended the other activities listed Table 4.

Table 4. Vanuatu: COL-supported activities and outputs, FYs 2012/13 to 2014/15

Activities/Processes	Output Indicators (Actual)
FINANCIAL YEAR 2012/13	
Workshop: Cost & Financing of Open Schools (Vanuatu)	8 (out of 22) participants from Vanuatu x 32 training hours = 256 participant hours
Roundtable Discussions	19 officials from Vanuatu Ministry of Education and Training x 14 days @ 7 hours per day = 1,862 participant hours
Workshop: Tutor Training for Learning Support (FJF, 06/2013)	7 participants on Espiritu Santo x 5 days @ 7 hours per day = 245 participant hours
FINANCIAL YEAR 2013/14	
Workshop: Learner Support Training (JS, 15–17/07/2013)	13 participants from Vanuatu x 5 days @ 7 hours per day = 455 participant hours
Workshop: ODL Tutor Training & Consultation (FJF, 11–15/11/2013, Luganville)	16 participants from 4 schools (Santo East, College de Luganville, Hog Harbour, St. Michel) & VMoET x 5 days @ 6½ hours per day = 520 participant hours
Financial Transfer: Support for Tutor Training and ID Workshops	Local costs for workshops listed above and below
Meeting: VMoET Officials at Epauto SS (05/12/2013)	17 participants from Epauto SS x 1 hour = 17 participant hours
Workshop (VMoET): Policy Consultation & Development	5 participants in Port Vila, Vanuatu x 3 days @ 7 hours per day = 105 participant hours
Workshop: OS Curriculum Writing Skills (BJ of Te Kura, 01/2014)	13 participants from Vanuatu x 5 days @ 8 hours per day = 520 participant hours
Courier Costs	
FINANCIAL YEAR 2014/15	
Workshop: Instructional Design for Curriculum Development (08/2014)	17 participants from Vanuatu x 5 days @ 7 hours per day = 595 participant hours
Workshop: Consultative (FJF-08/2014)	3 participants from Luganville on Espiritu Santo x 5 days @ 8 hours per day = 120 participant hours
Financial Transfer: Support for ID for Curriculum Development Workshop	Local costs: 4 subjects (16 booklets each) developed by end of 2014 = 64 booklets
Sponsorship: Certificate in Designing & Facilitating eLearning (L5) at OPNZ	2 participants from Vanuatu (one for a single trimester and one for three trimesters) = total of 800 participant hours

5.1.2 Findings of staff survey – Vanuatu

The online survey of staff involved with the OS programme in Vanuatu was closed on 11 July 2015 in order to analyse responses. A total of 14 questionnaires had been collected by that date, all but one of which were complete. However, after closer examination, it became apparent that one of the responses was a duplicate, and this was deleted in order to avoid skewing the results. Thus, the total number of valid responses to the Vanuatu OS Programme Staff survey was 13. Statistics provided by VMoET indicated that 11 teachers have been trained for ODL curriculum/materials development, whilst a further 13 teachers have received training in learner support. In addition, at least three staff members of VMoET have been directly involved in planning and implementing the OS programme. Thus, the response rate for the staff survey was approximately 48 per cent.

All of the respondents had started working with the OS programme since its launch in 2014, and their average age was 39. Of the 12 respondents who indicated their gender, 58 per cent were women. In general, those who had taken part in the workshops supported by COL felt that these interventions had a very positive or somewhat positive impact on their understanding of, attitude towards and skills for working in an OS programme. A more detailed analysis of the findings in regard to this and the following question is given in the next section of this report.

In terms of the impact the OS programme has on students, all of the staff/teachers who responded agreed or strongly agreed that using these study materials will improve the students' performance in examinations. All but one of the respondents disagreed with the statement that the study materials are not flexible for students to work with. In addition, all of the staff/teachers who responded felt that using the study materials fit in well with the way students like to learn.

There were mixed views about how well these study materials facilitate student learning, how easy they are to use, and whether students are reluctant to tell others about the experiences. Staff/teachers were divided on the impact that using paper study materials had on students' motivation, with roughly equal numbers on both sides of the issue. An unexpected outcome was that half of the staff/teachers agreed or strongly agreed that students were spending *less* time on their studies since receiving the study materials. A similar number felt that students were more isolated from other students when using the study materials.

In terms of the impact of the OS programme on their teaching practice, eight out of 13 staff/teachers (62 per cent) disagreed or strongly disagreed with the statement: "I still teach pretty much the same way as I did before." All of the respondents felt that they now have a greater understanding of how to facilitate learning and how to develop self-instructional materials for their students. Ten of the 13 respondents (77 per cent) believed that they now use more learner-centred methods, whilst seven (54 per cent) reported that they spend less time lecturing their students. At least one teacher said that she has adopted certain OS approaches for teaching her students in the conventional classroom, which has resulted in a number of positive impacts, including greater involvement in the learning process.

The introduction of the OS programme has also had a positive impact on the attitudes of staff/teachers in Vanuatu. Ten of the 13 respondents (77 per cent) agreed or strongly agreed that

they now feel more motivated as teachers, and a similar number said that they feel more enthusiastic when meeting with students during contact sessions. In their supplementary comments, two respondents highlighted the impact of this initiative on their lives — how it has renewed their dedication to the teaching profession and transformed their attitudes. All but two of the respondents (85 per cent) planned to continue their professional development by enhancing their understanding and skills for ODL, and seven (54 per cent) reported that they now have more interactions with other teaching staff. One possible unintended consequence of the introduction of OS is to create dissatisfaction amongst staff members about unilateral changes in the terms and conditions of their employment. However, only two of the respondents (15 per cent) indicated that they felt this way, whilst eight (62 per cent) disagreed or strongly disagreed that this was a factor.

Since starting to work for the OS programme, three of the staff/teachers (23 per cent) reported that they had saved money on childcare expenses, transport fares or other costs. The average amount saved was more than VUV 21,600 per month. By contrast, all but three of the 11 staff/teachers (77 per cent) who responded to this question indicated that they now spent more money. Eight of them (62 per cent) had purchased their own computer, laptop or tablet, whilst four (31 per cent) spent more on Internet charges and other things related to the OS programme. On average, respondents spent VUV 50,000 per month more than they had previously.

The questionnaire also afforded staff/teachers the opportunity to share their thoughts about the OS programme in an open-ended manner, and seven of the 13 respondents availed themselves of this opportunity. One indicated dissatisfaction as follows:

I volunteered to teach students but I wasn't ready for the difficulties and the expenses.

By contrast, the remaining six respondents were very positive, focusing on the benefits they had experienced in terms of their teaching practice and professional development. All of these six respondents felt that their involvement in the OS programme had made them better teachers/educators and had benefited their work with students in a conventional classroom environment. One went on to highlight the impact that the OS programme had on the wider community where she lives. In an environment where teenagers are increasingly exposed to unhealthy activities, such as drinking and drug abuse, she had managed to reintegrate 13 early school-leavers into the conventional education system. At the time of writing, all of these students have progressed to Grade 11 in conventional schools and are continuing to do well in their studies.

5.1.3 Findings of student survey – Vanuatu

There were 12 valid responses to the survey of students in Vanuatu, all but one of which were substantially complete. All of the respondents took part in the programme during 2014 and completed their studies in the same year. One quarter of the respondents were female, and all of them are now between 17 and 20 years of age.

Although a total of 60 young people enrolled for the pilot phase of the OS programme in that year, only 36 attended regularly. None of the respondents came from the sub-group that dropped out

of the OS programme, but the response rate amongst those who persisted was just under 31 per cent. Because the student respondents were drawn from those who had re-entered the conventional education system or who had maintained contact with their former tutors, the self-selected character of this sample group is likely to have introduced some bias. It is only natural to suspect that these respondents represent the “successful” products of the OS programme, and that those who could not cope or failed the Grade 10 examination at the end of 2014 are under-represented. Notwithstanding this cautionary note, the following results were obtained.

In response to the question about the impact of study materials, all of the student respondents believed that using these resources would improve or had improved their performance in the end-of-year examinations. Likewise, all of the respondents indicated that the study materials fit in well with the way they prefer to learn, but only seven out of the 11 students (64 per cent) disagreed with the characterisation that these resources were not flexible to work with. All but one of the respondents (91 per cent) reported that it was easy to understand how to use and interact with the study materials, though only eight out of 11 respondents (73 per cent) disagreed or strongly disagreed with the proposition that the study materials made it more difficult to learn the course content.

Student views about the other issues explored in question 5 were more mixed. Six out of 11 students (55 per cent) who responded to the item said they had felt less motivated to study since receiving the study materials. In response to the proposition, “I spend less time on my studies than before,” respondents agreed and disagreed in almost equal numbers. Seven out of 11 respondents (64 per cent) reported that they felt more isolated from other students when using the study materials, whilst five students (45 per cent) agreed or strongly agreed that they were reluctant to tell their friends and acquaintances about their participation in the OS programme.

None of the respondents had been employed or engaged in income-generating activities prior to enrolling in the OS programme, and only one of the 12 had started working in the six months since finishing their studies. All but one (91 per cent) said that taking part in the OS programme had helped, either a bit or a lot, to improve their chances of getting a job. In their supplementary comments, two of the past students ascribed this benefit to the self-discipline instilled by the programme, which they believed would help them to achieve their goals. Only one of the respondents (eight per cent) felt that they would now be able to earn more money than before undertaking the OS programme, whilst the remainder were unsure about this.

None of the respondents had any children living with them, so question 11 was not relevant. However, seven out of 12 past students (58 per cent) indicated that their own health had improved whilst participating in the OS programme. Many of them ascribed it to the lighter course load they were taking, since they did not have to repeat subjects that they had passed during previous sittings of the Grade 10 examination. This reduced their stress levels, gave them more time to concentrate on the subjects where they were weak and allowed them to get a good night’s rest. Because they attended classes only in the evenings, one respondent said that he ate cooked meals more regularly. However, only four out of 11 respondents (36 per cent) reported that participating in the OS programme had a positive impact on their relationships with other family members. These benefits took the form of improved communication, greater respect and increased support.

In terms of changes in other social relationships, half of the respondents said that they had taken up new (mostly sporting) activities since enrolling with the OS programme. Students were asked to rate their level of satisfaction with social relationships before and after taking part in the programme, and there were significant changes over the period. Weighted average scores increased from +0.92 to +1.50 on a scale from -2.00 (very dissatisfied) to +2.00 (very satisfied). After finishing the programme, 11 of the 12 respondents (92 per cent) indicated that they were very satisfied or satisfied with their social relationships, whilst the remaining respondent gave a neutral answer.

The OS programme also had a financial impact on the students who took part. Although half of the respondents said that they had not saved any money whilst studying, five (42 per cent) indicated that they had spent less on transport costs, food and drink, or other things. On average, these savings amounted to VUV 10,000 per month. However, these savings were overshadowed by additional expenditure that averaged VUV 43,500 per month. Six out of 11 respondents (54.5 per cent) indicated that they had spent more on course fees and other things related to their studies.

The student questionnaire also included space for respondents to share any other issues they wished to air about the OS programme. All but one of the respondents used this opportunity to add a few comments. Some of these were suggestions for improving the programme, such as a request for more contact sessions. Other respondents related personal circumstances that posed challenges for them, such as the cost of transport to and from the OS centre and having to travel home late at night after classes finished. By contrast, many expressed their gratitude for being given a second chance to pass the Grade 10 examination, which opened up new life opportunities. Others acknowledged that the ODL approach had increased their interest in pursuing further studies, instilled self-discipline and enhanced their confidence.

5.2 Belize OS programme at GLED

In Belize, three out of every ten children between 14 and 17 years of age (30.0 per cent) are not attending school, and the vast majority of these young people (72.8 per cent) are engaged in work or other income-generating activities.⁵³ Whilst more than one in four of these out-of-school youths indicated that they were not interested in further education, 21 per cent of children aged 14 to 17 said they could not afford the fees and/or associated costs, and the latter reason was given more frequently in urban areas.⁵⁴ Twenty-eight per cent of working youths had some secondary education but had yet to complete the Caribbean Secondary Education Certificate (CSEC) or General Education Diploma (GED).⁵⁵ In 2010, it was estimated that over 77,000 people 15 years of age and older had left school after completing the primary cycle but without finishing high school.⁵⁶

Gwen Lizarraga High School* is a government-supported senior secondary institution located in Belize City, the country's main port and largest population centre. For many years, it has offered second-chance education for adolescent drop-outs, other out-of-school youths (16 years of age and

* This institution was named after the Honourable Gwendolyn Margaret Lizarraga (née Smith), MBE, a Belizean businesswoman, women's rights activist and politician. Women were allowed to stand in national election for the first time in 1961, and "Madam Liz" was elected to the National Assembly of British Honduras. She was subsequently appointed the Minister for Education, Housing and Social Services, and she served for three terms in this position.

older) and adults through face-to-face classes at its Evening Division. In 2012, the Gwen Lizarraga High School Evening Division (GLED) began the process of developing online study materials for students to use as an alternative to attending classes on a daily basis. The Government of Belize, through its Ministry of Education, Youth and Sports (BMoEYS), provides a limited number of scholarships for students who never had a chance to finish high school. However, the main source of funding for GLED is student fees. The staff complement for GLED includes a principal (who is also the principal for the day high school), an administrator, 16 teachers (five of whom are female), two support staff and a number of security guards.

Table 5. Belize OS Programme: GLED student enrolments and “graduates,” AYs 2011/12 to 2014/15

Academic Level/Year	AY 2011/12		AY 2012/13		AY 2013/14		AY 2014/15	
	Total	% Female						
Level I / First Year	105	50.5%	133	54.9%	122	52.5%	92	56.5%
Level II / Second Year	114	57.0%	130	61.5%	146	56.8%	146	66.4%
Level III / Third Year	150	66.0%	221	67.0%	236	65.7%	223	61.9%
TOTALS	369	59.1%	484	62.2%	504	59.9%	461	62.3%
Final Year Graduates	99		148		155		138	
Graduation Rates								
Total	66.0%		67.0%		65.7%		61.9%	
Female		91.9%		64.2%		59.4%		63.0%

Enrolments with GLED have fluctuated considerably over the last four years (see Table 5), but this may simply be a reflection of the availability of funding rather than an identifiable trend. At the time of writing, new students were placed at one of three levels, depending upon their previous level of education, but the school’s management planned to add a Foundation Year (Pre-Level I). This would enable enrolments to rise to a total of 600 per annum, with effect from the beginning of AY 2016/17. There has been a marginal decrease in the rate of completion by final-year students since the online study materials were introduced in AY 2013/14, but there are insufficient data to determine whether these differences are significant and what caused the apparent decline.

5.2.1 Specific outputs of COL-supported interventions – Belize

COL agreed to support GLED’s plan to introduce innovative education by setting up an eLearning platform for its students. This involved a range of capacity-building activities for GLED staff, as outlined in Table 6. A key component of this support was the twinning of GLED with the Fraser Valley Distance Education School (FVDES) in Chilliwack, British Columbia. This activity involved study visits by staff from the twinned institutions to both Belize and Canada, as well as ongoing exchanges online between the two institutions.

Table 6. Belize: COL-supported activities and outputs, 2012–2015

Activities/Processes	Output Indicators (Actual)
FINANCIAL YEAR 2012/13	
Workshop: online platforms and planning for study materials	15 participants from Belize plus 1 from UB x 2 days @ 7 hours per day = 210 participant hours
Official opening of GLOS	
Training: follow-up on materials development (Belize)	15 participants + 1 from UB x 5 days @ 7 hours per day = 560 participant hours
Monitoring, assessment and support by UB staff (Belize)	17 participants from GLED + 1 from UB x 2 weekly visits @ 2 hours per visit = 72 participant hours
Twinning: study visit by FVDES to GLOS (Belize)	17 participants from GLED + 1 from UB + 1 from FVDES x 3 days @ 7 hours per day = 399 participant hours
Sponsorship: certificate in designing and facilitating eLearning (L5) at OPNZ	1 participant from Belize x 3 trimesters @ 200 hours per trimester = 600 participant hours
FINANCIAL YEAR 2013/14	
Workshop: cost and financing of open schools (Barbados)	3 (out of 13) participants from Belize x 5 days @ 7 hours per day = 105 participant hours
Twinning: study visit by GLOS to FVDES	2 participants from GLOS + 1 from UB x 4 days @ 7 hours per day = 84 participant hours Plus up to 10 participants from FVDES @ 4 hours each = 40 participant hours
Buddy system: online exchanges between GLOS and FVDES	7 participants from GLOS (plus 4 more possible) + 1 participant from UB x 20 hours of group interaction = 160 participant hours
Workshop: building capacity for online content (NotesMaster)	15 participants from GLOS + 1 from UB x 8 days @ 7 hours per day = 896 participant hours
Monitoring and mentoring by staff from UB	1 participant from GLOS
Workshops: gender main-streaming in open schooling (03/2014, Belize)	28 participants from GLOS and associates 3 x one-day workshops (08, 15 and 22 March 2014) = 17 contact/training hours = 476 participant hours
FINANCIAL YEAR 2013/14	
Sponsorship: certificate in designing and facilitating eLearning (L5) at OPNZ	2 participants from Belize x 3 trimesters @ 200 hours per trimester = 1,200 participant hours
Workshops: guidelines for gender equality in open schools (02–04/2015, GLOS/GLED)	3 workshops, 19–21 participants from Belize x 1 day each = 320 participant hours Plus 2 workshops/meetings with core team (5 participants) x 1 day each = 70 participant hours

A total of 6,741 participant hours of capacity building were provided through COL-financed activities during the three-year period under review.

5.2.2 Findings of staff survey – Belize

In order to collect additional responses from staff members at GLED, the deadline for completing the online questionnaire was extended until 6 August 2015. When the site was finally closed, a total of 11 responses had been collected out of 19 potential respondents (Principal, Administrator, 16 tutors/teachers, UB consultant), representing a response rate of 58 per cent. All but three of the respondents (73 per cent) had worked with GLED since 2011 or earlier and had thus experienced the transition from conventional evening classes taught through face-to-face sessions to an OS programme. Six of the 11 (55 per cent) were female, and the average age was 45 years.

Respondents were asked to rate the impact of the different activities supported by COL on their understanding of, attitude towards and skills for working in an OS programme. Overall, the responses were very positive, with average scores ranging from +2.50 to +3.00 on a scale of –3.00 (“very negative”) to +3.00 (“very positive”). In their supplementary comments, several respondents acknowledged the contributions of Dr Maxine McKay and Dr Lorna McKay. Staff members were also asked to indicate how much they had invested (in terms of time, effort, money and other resources) in each activity. The average scores for items under this question ranged from +0.50 to +2.64. Further analysis of these results can be found in Section 6 of this report.

Question 6 asked tutors/staff members about their impressions of the impact of introducing the OS programme on students. All of the respondents (100 per cent) agreed or strongly agreed with the statements that “students feel more confident when using computers and the Internet” and “using online materials fits in well with the way students like to learn.” Similar numbers disagreed with the propositions that “students are less motivated to study” since the online materials were introduced and that they “are not flexible to work with.” Ten out of 11 (91 per cent) felt that using the online materials had improved or would improve the students’ performance in end-of-year and/or end-of-course examinations. Responses to the remaining items indicated that staff members had mixed views about the impact of the OS programme on the ease with which students learn course content, their feelings of isolation from fellow students, and their willingness to share their experiences with peers and family, as well as other issues.

Seven of the nine staff members (78 per cent) who answered the next question said that they now spend more time on their duties at GLED. These respondents estimated that they spend between 15 and 40 hours more per week than they did previously, with an average of 29 hours. However, given that the normal working week for the typical teacher is 40 hours or fewer, it is difficult to justify these estimates, unless some of the respondents were reporting the total time they spend at GLED rather than the additional commitment that has arisen since the OS programme was introduced.

The questionnaire also asked tutors/staff members about the impact of the OS programme on their professional practice. All of the respondents (100 per cent) agreed or strongly agreed that they now have a greater understanding of how to facilitate learning, know how to develop self-instructional materials for their students and use more learner-centred methods. Ten out of 11 (91 per cent) reported that they now spend less time lecturing their students, and a similar percentage indicated that they no longer teach the same way as they did before.

The introduction of the OS programme has also had a significant impact on the way in which tutors/staff members use ICT at GLED. All 11 of the respondents (100 per cent) agreed or strongly agreed with statements related to their increased confidence when using computers, the Internet and learning management systems, greater proficiency in using common application software, and enhanced knowledge of how to develop online learning materials. Only ten tutors/staff members responded to the final item under question 9, but all of them (100 per cent) felt that they now have a greater appreciation of the potential uses and limitations of eLearning.

The next question probed changes in the attitudes of tutors/staff members since the OS programme was introduced. Ten out of 11 respondents (91 per cent) strongly agreed with the statement “I now feel more enthusiastic when I meet with students during our contact sessions,” whilst the remaining one also agreed with these sentiments. In addition, all of the respondents (100 per cent) indicated that they now feel more motivated in their teaching and plan to continue their professional development by improving their understanding and skills for eLearning. All but one of the respondents (91 per cent) felt that they now have more interaction with other teaching staff. In her supplementary comments, one remarked: “We are [a] more united staff and we share ideas.” Only one of the respondents (nine per cent) said they were fed up because the introduction of the OS programme had unilaterally changed the terms and conditions of their employment.

All but one of the respondents (91 per cent) indicated that they had saved money since the OS programme was introduced. Eight of the ten who reported savings (73 per cent of all respondents) reported that they spend less on food and drink, since they are now able to eat meals at home rather than having to buy food when teaching classes every evening. Seven (64 per cent of all respondents) indicated that they had saved money on childcare expenses for those evenings when they don’t teach classes, and a similar number said they spent less on bus fares or other transport. On average, these savings amounted to just less than BZD 260 per month, with a range of BZD 125–400 per month.

Six of the 11 respondents (55 per cent) also reported that they now spend more than they did before. Four of them (37 per cent of all respondents) had purchased their own computer, laptop or tablet, and one (nine per cent of all respondents) was spending more on Internet charges. The range of additional expenditure ranged from BZD 125–1,500 per month; the higher figures reflect the cost of acquiring hardware. On average, these six respondents spent BZD 800 more per month than before the OS programme was introduced at GLED.

The final question was open-ended, allowing tutors/staff members to raise any other issues they wished, and eight respondents took this opportunity to comment. These comments included the following:

It has made life easier.

It has inspired me to want more for my students.

It has given me a wider scope . . . and has made me aware of the benefits of [open schooling].

It has allowed me to see education from a different perspective.

5.2.3 Findings of student survey – Belize

A total of 37 students from GLED took part in the survey, though three of them completed only the first few questions. Given the enrolment figures reported above, this represents a response rate of roughly eight per cent.

Whilst two students had been attending classes at GLED since 2011 or earlier, 16 of the total (43 per cent) had first enrolled in August 2014, and a further 12 (32 per cent) had first started studying at the centre in 2013. As the OS programme commenced in August 2013, neither of these latter two groups (a total of 75 per cent of respondents) were able to comment on the situation prior to its introduction. Nevertheless, the majority of them went ahead and answered the questions that asked them to compare the current situation with the previous state of affairs at GLED, so these responses should be treated with a degree of caution. Sixty-eight per cent of the respondents were planning to continue their studies at GLED in the 2015/16 academic year, but 19 per cent of them had just graduated and the remainder had completed the programme in 2013 or 2014.

Twenty-five out of the 36 students (71 per cent) who responded to the question on gender indicated that they were female. The youngest respondent was 16 years of age and the oldest 41, with average and median ages of 27 and 26 years, respectively. Forty-nine per cent of the respondents selected the Creole option when describing their ethnic background, a further eight (22 per cent) ticked Garifuna, whilst four (11 per cent) claimed Mestizo/Spanish/Latino ethnicity, three (eight per cent) identified themselves as Maya, and two (five per cent) were of East Indian ancestry.

Question 6 probed students' perceptions in relation to the use of online study materials. Twenty-six out of 32 respondents (81 per cent) indicated that the materials fit in well with the way they like to learn, and 24 (75 per cent) believed that this had improved or would improve their performance in the end-of-year and/or end-of-course examinations. Seventy-six per cent of respondents felt more confident when using computers and the Internet since the OS programme was introduced. Sixty-nine per cent agreed or strongly agreed with the statement that "it is easy to understand how to use and interact with the online materials," and a similar percentage indicated that they would not be reluctant to tell others about their experiences. In general, the responses to items exploring ease of access, flexibility and ease of learning were also positive. In addition, a significant majority of respondents believed that the use of online materials did not have an impact on their motivation or the time they spent on their studies. Only two out of 31 respondents (six per cent) felt more isolated when using the online materials.

Twenty out of 34 respondents (59 per cent) indicated that they had a job or were engaged in income-generating activities before enrolling to study at GLED, whilst 25 of them (74 per cent) are now employed. Fifty-nine per cent felt that their studies had helped a lot in finding employment or in improving their employment prospects, whilst a further four respondents (12 per cent) indicated that it had helped a bit. Of the other ten, only one indicated that studying at GLED had held him back a bit, whilst the remaining nine said that it had neither helped nor held them back. Of the latter group, one already had a job, two were not currently seeking employment and one had just

started her studies at GLED. Twenty-one out of 33 respondents (64 per cent) believed that they could earn more money after finishing their studies at GLED, whilst 33 per cent said that they didn't know or weren't sure and one respondent (three per cent) indicated that she would not be able to earn more. The average estimate of this increased earning power was BDZ 330 per month.*

Eleven out of 34 respondents (32 per cent), all but three of them women, reported that they had children living with them at least part of the time. Seven of them (64 per cent of parents or 21 per cent of all respondents) indicated that their studies at GLED had had an impact on their child(ren)'s health. Two of these parents indicated that their children get sick less often, whilst a further two reported greater awareness and understanding of health issues. Question 13 probed the impact of the OS programme on the students' own health. Out of a total of 34 students who responded to this question, 18 (53 per cent) said they had noticed health changes since enrolling for studies at GLED. In most cases, these changes were positive, including weight loss, eating a healthier diet, learning how to care for oneself and thus to avoid illnesses, reduced stress and regulating of blood pressure. One student indicated that the support from the teachers and principal at GLED helped in coping with his/her HIV-positive status. However, one respondent indicated being more tired now, trying to balance the demands of study and work. Twenty-three out of 29 students who responded to the next question (79 per cent) felt that their studies had a positive impact on their health or that of their children.

Question 15 asked respondents whether they had noticed any changes in their relationships with other family members since enrolling to study at GLED. All but five of the students who responded to this question (85 per cent) said that they had. A number of them reported that their parents, in-laws, siblings and children are proud of them for returning to complete their education, and this has led to improved communication, tolerance, respect and support within their families. Two noted that returning to education had enabled them to establish relationships with their fathers, who had disapproved when they dropped out of school. One respondent indicated that coming to GLED has enabled his/her family to come to terms a bit more with his/her sexuality. Another commented:

My family supports me [now]. It is also bitter sweet, because my mother will not see me accomplish my diploma, and I let her down while she was alive.

In terms of wider social relationships, 14 out of 34 respondents (41 per cent) said that they had joined clubs or had taken up new activities since starting to study at GLED. These activities included becoming leaders/mentors for youth groups, doing volunteer work in the community, joining a dance club, a cooking club and a committee for Carnival, as well as taking part in extra-curricular sporting and cultural events organised by GLED. Prior to enrolling at GLED, 24 out of 33 respondents (73 per cent) indicated that they had been satisfied or very satisfied with their social

* The actual difference in median monthly salaries for workers with secondary school qualifications and their counterparts with primary education only is BZD 298. Source: Belize Statistical Institute Labour Force Survey (September 2014), data obtained by special request.

relationships. By contrast, all but two respondents (94 per cent) indicated satisfaction with their social life now. However, the decision to complete one's education can alienate students from their friends and acquaintances; one respondent reported:

[M]y peers do not talk with me again, because they say I should not go to school.

Fifty-six per cent of the respondents (19 out of 34) indicated that they have spent less whilst studying at GLED. The amounts saved were estimated to be BZD 50–1,000 per month, but the average was just under BZD 215 per month. These savings were achieved primarily by eating meals at home rather than buying food on the street (ten out of 34 respondents) and by studying at home rather than spending money on transport to attend classes at the school (ten respondents). Five students (14 per cent of all respondents, but 45 per cent of parents who have children living with them) reported saving money on childcare expenses, whilst half of all respondents (50 per cent) said they spent less on other things.

At the same time, 58 per cent of respondents (19 out of 33) indicated that they now spend more money than previously, averaging just under BZD 217 per month. Fourteen of the respondents (42 per cent of the total) said that they had bought their own laptop or tablet, whilst nine (27 per cent) claimed that that they now spend more on Internet charges. Only two respondents indicated that they pay more for printing or photocopying their study materials.

The questionnaire concluded with an open-ended question inviting respondents to share anything else they wished. Of the 24 students who took this opportunity to comment, many complimented the staff of GLED on creating a welcoming environment and delivering a valuable programme. One respondent put it like this:

This is my safe place away from a crazy world. I am so thankful for Dr McKay and her teachers.

Another student commented:

It has help[ed] me to view life differently, to respect people, to value my life and the life of others. . . . I used to be giving trouble all the time.

Several respondents noted that the OS programme has had a fundamental impact on their lives, enabling them to re-evaluate their own worth, boosting their confidence and enhancing their self-esteem.

SECTION 6: ECONOMY, EFFICIENCY AND COST-EFFICIENCY

This section presents an analysis of the economy, efficiency and cost-efficiency of COL's contribution to the development of new OS programmes in Vanuatu and Belize. *Economy* refers to the relationship between a project's budget and inputs, specifically the relative prices at which inputs of appropriate quality have been procured. By contrast, *efficiency* is concerned with how inputs are transformed by processes or activities into outputs. Finally, *cost-efficiency* focuses on the degree to which the funds allocated to a particular intervention have produced value in terms of outputs. These relationships are illustrated in Figure 3.

6.1 Differences between economy, efficiency and cost-efficiency

In order to illustrate the differences between these concepts, let us consider the relative economy, efficiency and cost-efficiency of the two OS programmes in question compared with conventional classroom education at schools in Vanuatu and Belize. The data are summarised in Table 7.

In general, ODL programmes incur substantial start-up costs because of the need to acquire, develop or adapt self-instructional materials. In addition, where these materials are delivered online, as is the case at GLED, then certain ICT infrastructure will need to be acquired, installed and commissioned in order to make this possible. Because neither of these items of expenditure are required for traditional classroom teaching, OS programmes typically do not seem economical in the short-term. Only by spreading such costs over several years can economies of scale be realised.

Using the projections for income and expenditure for the OS programmes in Vanuatu and Belize over a ten-year period, it was possible to calculate the unit cost of providing educational inputs for one student per year. In Vanuatu, the unit costs of these inputs is less than 76 per cent of the amount that the Ministry of Education and Training spends to provide a comparable place in a conventional secondary school. The relative economy of GLED's OS programme is even higher; the cost per student per year is less than one fifth (19 per cent) of what Belize's Ministry of Education spends to maintain students in conventional high schools.

The relative internal efficiency of the two systems can be judged by comparing examination pass rates, as this is a common measure of the degree to which inputs (classroom instruction versus tutoring, textbooks versus self-instructional materials) have been converted into outputs (exam marks). In Vanuatu, between 43 per cent and 72 per cent of the 2014 intake of students on the OS programme passed the Year 10 examination, depending upon whether drop-outs are included in the calculation. There was considerable variation in the promotion/placement rate for conventional schools in Vanuatu's six provinces, but the range for Anglophone education was from 31 per cent to 53 per cent in 2013 (the year for which the most recent statistics were available). This indicates that the OS programme in that country is between 82 per cent and 233 per cent as efficient as conventional schools when it comes to producing Year 10 passes.

Table 7. Economy, Efficiency and Cost-efficiency of OS Programmes Relative to Conventional Schooling in Vanuatu and Belize

COUNTRY Type of schooling	ECONOMY Cost per student per year	EFFICIENCY Examination pass rate	COST-EFFICIENCY Cost per exam pass/graduate ⁶
Vanuatu			
Open Schooling Programme	VUV 85,579 ⁴	43% to 72%	VUV 118,531 to VUV 197,643
Conventional Secondary Schools	VUV 112,925 ¹	31% to 53% ²	VUV 213,066 to VUV 364,274
OS as a Percentage of Conventional	75.8%	82% to 233%	33% to 93%
Belize			
Open Schooling Programme	BZD 538 ⁴	61.9% ⁵	BZD 942
Conventional Secondary Schools	BZD 3,081 ³	69.5% ³	BZD 4,434
OS as a Percentage of Conventional	18.9%	89.0%	21.2%

Sources:

¹ Email correspondence with G. Ilaisa, 29 June 2015, based on data received from the VMoET Finance Department.

² VMoET, (2014), *Annual Statistical Digest 2013*, Figure 2-1, p. 41.

³ Ministry of Finance, Government of Belize, (2015), *Approved Estimates of Revenue & Expenditure for Fiscal Year 2015/16*, pp. 89, 93 and 97.

⁴ MS Excel workbooks of projected income and expenditure for OS programme in Vanuatu and Belize, generated by the author.

⁵ Email correspondence with Dr Maxine McKay, 22 September 2015.

⁶ The unit cost per examination/pass was calculated by dividing the unit cost per student per year by the exam pass rate. It was necessary to use costs for a single year because some OS students are resitting subjects that they failed after studying in conventional schools.

The situation in Belize is different. As shown in Table 5, the pass rate for final-year students at GLED has dropped somewhat since the online materials were introduced in AY 2013/14. However, there has been considerable variation in this statistic over the last four years, and this apparent decline may be within the normal margin of error. Regardless of these variations, the average pass rate for final-year students enrolled with GLED over the last two years has been lower than the secondary school completion rate for the conventional education system. GLED converts inputs (student years of learning) into outputs (high school “graduates”) at only 89 per cent of the rate achieved by the mainstream education system. Thus, we can conclude that OS is currently less efficient than traditional schooling in Belize.

Relative cost-efficiency can be measured by comparing the unit costs of producing an examination pass or “graduate.”* By this measure, both of the OS programmes in question proved more cost-efficient than conventional schooling. In Vanuatu, the OS programme is able to produce examination passes at between 33 and 93 per cent of the costs at conventional Anglophone schools. In Belize, GLED’s OS programme produces high school “graduates” at about 21 per cent of the amount spent at other senior secondary schools.

6.2 Unit cost analysis of activities supported by COL

The focus of this section is the relative economy, efficiency and cost-efficiency of activities supported by the Commonwealth of Learning. In order to provide a basis for comparison, it was necessary to convert the monetary value of various inputs to a common currency (PPP USD) and to divide the total contribution from COL by a common denominator (participant hours). These calculations yield the unit costs shown in Table 8.†

Expenditure varied considerably from activity to activity. The lowest unit costs were less than PPP USD 2 per participant hour for sponsoring OS staff to enrol for the Certificate in Designing and Facilitating e-Learning at the Open Polytechnic of New Zealand. By contrast, the highest unit cost was almost PPP USD 227 per participant hour for the study tour by staff from GLED and the University of Belize to the COL offices in Vancouver and the Fraser Valley Distance Education School in Chilliwack, British Columbia. However, it should be noted that the average unit cost of the GLED-FVDES twinning activity as a whole (of which the study visit was but one component) was less than PPP USD 46 per participant hour.

These data indicate that the most economical approach for capacity building is through distance education courses at existing institutions or by means of web-based seminars and streamed video interactions that can be customised to the needs of particular groups. Workshops facilitated by locally based experts/consultants and held at the open school itself or at a nearby venue also have low unit costs. In general, workshops facilitated by COL personnel are more economical than those facilitated by international consultants, particularly when the travel costs of COL staff can be shared between a number of activities in a particular country or spread over visits to a number of countries. However, this will not always be possible, particularly if the COL staff member does not have expertise in the field that is the subject of the workshop.

* This figure was calculated by dividing the unit costs per student per year by the exam pass rates in the above table. Normally, students receive inputs for several years before producing this output. However, because some OS students may be resitting subjects that they failed after several years of study at conventional schools, it was necessary to use costs for a single year of inputs in order to compare like with like.

† The unit costs include the working time and associated overheads contributed by COL staff but exclude expenditure on airfares, other travel and subsistence, as these data were not readily available. For this reason, the unit costs of workshops facilitated by COL staff are not directly comparable to the costs of those facilitated by external consultants, as the latter include expenditure on travel.

Table 8. Unit Costs of COL-supported Activities (PPP USD) in Vanuatu and Belize

VANUATU		BELIZE	
Component of COL's Three-Year Strategic Plan Activity	Unit Cost (PPP USD)	Activity	Unit Cost (PPP USD)
Establishment of New Open Schools			
Workshop: Tutor-Training for Learning Support (06/2013)	8.02	Workshop & Online Webinar: Introduction to OS	5.86
Workshop Learner Support Training (07/2013)	9.36	Workshop: Training Teachers at GLED	26.82
Workshop: Tutor-Training and Consultation (11/2014)	15.63	Monitoring, support and evaluation	9.12
Twinning Project (as a whole)			45.46
		Visit by FVDES to Belize	7.38
		Visit by GLED and UB to Canada	226.68
		Online exchanges between staff at GLED and FVDES	negligible
Capacity-building to Ensure Integration of Technology and OER			
Workshop: ODL Instructional Design (01/2014)	24.25		
Workshop: ODL Curriculum Development (08/2014)	29.46	Workshop: Developing Online Content (NotesMaster)	33.09
Sponsorship: eLearning Certificate at OPNZ	1.54	Sponsorship: eLearning Certificate at OPNZ	1.54
Policy and Systems Development and Implementation			
Workshop: Cost and Financing of Open Schools (Vanuatu)	51.56	Workshop: Cost and Financing of Open Schools (Barbados)	127.47
Innovation for Girls' Education (as a whole)			26.42
		Workshops: Gender Issues in OS	8.91
		Workshops: Policy Guidelines	47.80

6.3 Efficiency of COL-supported activities

As discussed in sub-section 1.3, a formative evaluation of some of the COL-supported activities included in this VfM review concluded that efficiency was “excellent,” even though no quantitative evidence was presented. Key to any assessment of efficiency is the ability to identify and measure the outputs of particular processes or activities that have been carried out using the inputs provided. All of the workshops and other development interventions supported by COL include a final evaluation, where feedback is collected from participants about the extent to which the activity has achieved its stated objectives. Unfortunately, these feedback exercises are not standardised, and they rarely include objectively verifiable measures of outputs.

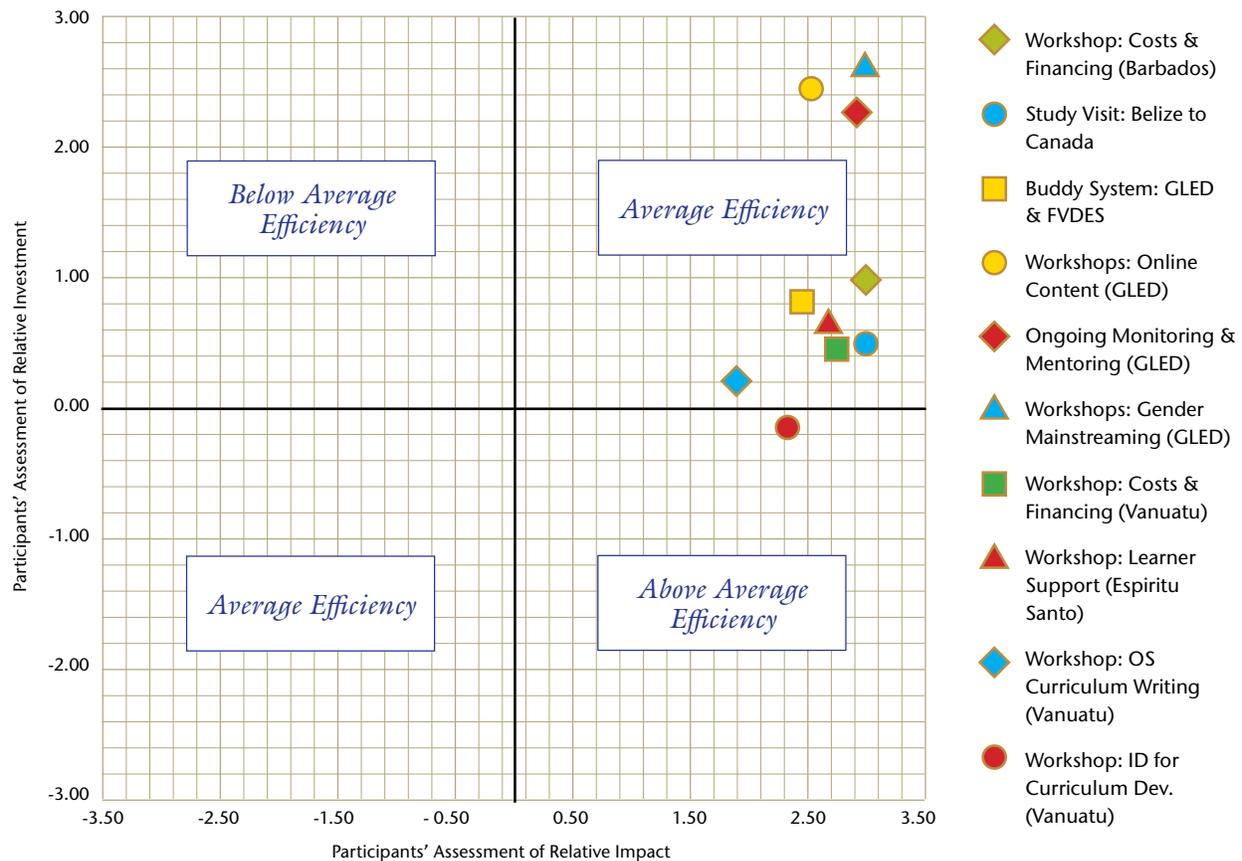
Noteworthy exceptions were the pre- and post-tests taken by participants on the two workshops to provide training on the costs and financing of open schools, which were facilitated by the author of this report. These short quizzes included 11 questions to assess the degree to which participants’ knowledge and understanding of the topic changed over the course of the five-day workshop. This basic measure of training outputs resulted in an increase in average scores of more than 12 percentage points (from +4.55 to +7.36 on a scale from –11 to +11) for the group in Vanuatu, but a decrease of just over two percentage points (from +6.17 to +5.67) amongst participants at the Barbados workshop. Apart from this example, no quantitative assessments of the outputs of COL-supported activities were found in the documents reviewed by the author.

As discussed in sub-section 3.2.1, the basic efficiency resource model was adopted to assess the relative efficiency of the various activities supported by COL. The online questionnaires for teachers/staff members in both Vanuatu and Belize included items asking respondents to rate the impact of different activities on their understanding of, attitudes towards and skills for working in an OS programme. The range of response options ranged from “very positive” to “very negative,” plus “does not apply” for those who had not participated in a particular activity. In line with recommendations from the originators of the BER methodology, a six-point Likert-type scale (without any neutral mid-point) was used in order to force respondents to make binary decisions between positive and negative categories. Values from +3.00 (“very positive”) to –3.00 (“very negative”) were attached to the response options to facilitate statistical analysis.

In addition to collecting participants’ perceptions of the outputs of particular activities, the BER approach also involves their assessment of inputs. Accordingly, a separate question was inserted in both surveys that asked staff members to indicate how much they had invested (in terms of time, effort, money and other resources) in each activity. The scale of responses ranged from “far too much” (+3.00) to “far too little” (–3.00), but this wording appeared to cause some confusion. In their supplementary comments, several respondents indicated that they had selected the “far too much” option but meant this to be a positive comment, equivalent to something along the lines of “just enough” or “just as much as the activity merited.” Because of this misunderstanding, caution must be exercised when interpreting the input measures in the subsequent analysis. Likewise, some of the activities had involved very few of the respondents as participants (in particular, the Costs and Financing of Open Schools and Learner Support workshops in Espiritu Santo). The limited number of responses to these items raises doubts about the reliability of the resulting data.

These outputs — respondents’ perceptions of the impact of COL-supported activities — were plotted against inputs (i.e., respondents’ perceptions of the relative investment), and the results are shown in Figure 6. In the typical representation of BER, the upper right and lower left quadrants of the diagram represent the range of “average efficiency,” where the outputs are in relative balance with the inputs. By contrast, activities plotted in the lower right quadrant are considered “above average” in terms of efficiency, since more outputs are obtained with fewer inputs. By contrast, the efficiency of interventions appearing in the upper left quadrant are “below average” because relatively modest outputs are achieved with the same or even more inputs.

Figure 6. BER diagram of participants’ perceptions of the relative impact and relative investment associated with COL-funded inputs



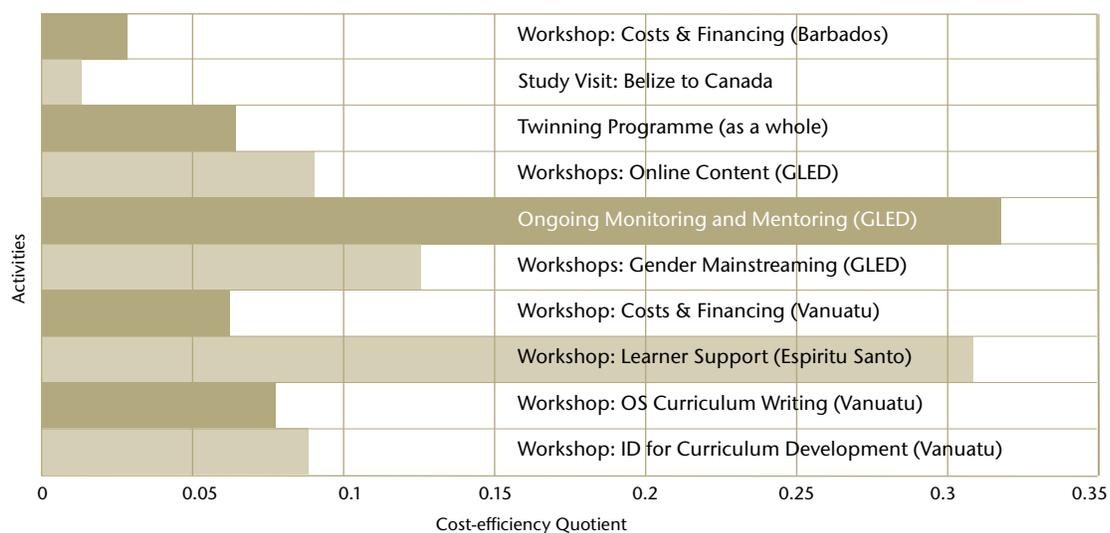
The mean ratings assigned by staff respondents to the impact of the COL-supported interventions were generally high, within the range of “somewhat” to “very positive.” At the same time, their assessment of the investment associated with these activities also fell in the range from “a bit too much” to “far too much,” apart from one exception. As a result, all but one of the interventions have been plotted in the upper right quadrant, suggesting they are all of “average efficiency.” Nevertheless, differences in relative efficiency can be ascertained between the upper and lower clusters. Activities plotted closer to the horizontal axis are relatively more efficient than those appearing closer to the top of the same quadrant.

Caution should be exercised in generalising from the findings of this BER exercise. As the result of confusion about COL-supported workshops with similar names, not all of these activities were included in the questionnaires. In addition, it appears that respondents interpreted the rating scale for the input measure in an unexpected way. In their supplementary comments, several respondents indicated that they had selected the “far too much” option but meant this to be a positive comment, equivalent to something along the lines of “just as much as the activity merited.” Likewise, some of the activities had involved very few of the respondents as participants (in particular, the two workshops on Costs and Financing of Open Schools and the Learner Support workshop in Espiritu Santo). The limited number of responses to these items raises doubts about the reliability of the resulting data.

6.4 Cost-efficiency of COL-supported activities

As the unit cost analysis demonstrated, there were considerable variations in the amounts of money required to generate equivalent volumes of input (participant hours). Thus, in addition to reviewing the relative efficiency of COL-supported activities, it is also necessary to consider their cost-efficiency. Cost-efficiency quotients were derived by dividing the mean ratings of outputs/outcomes/impact from respondents to the staff questionnaire by the unit costs for each intervention, to obtain cost-efficiency quotients. These are illustrated in Figure 7*

Figure 7. Cost-efficiency quotients of COL-supported activities



Two activities achieved a very high degree of cost-efficiency: the ongoing monitoring and mentoring provided to staff at GLED by staff from the University of Belize (principally, Dr Maxine McKay), and the Learner Support workshop facilitated by Mrs Frances Ferreira at Espiritu Santo, Vanuatu, in June 2013.† The lowest cost-efficiency quotient was associated with the study visit by staff from GLED and UB to the COL offices in Vancouver and FVDES,

*Two activities (the buddy system between GLED and FVDES, and ongoing support for the development of online content provided by NotesMaster for teaching staff at GLED) were excluded from this analysis, as it was not possible to itemise the associated costs.

though the cost-efficiency of the twinning programme as a whole was about average. The workshop on Costs and Financing of OS, held in Barbados during August 2013, also had a cost-efficiency quotient that was below average and lower than that for a similar workshop held in Vanuatu the previous year. The cost-efficiency quotients for the remainder of the COL-supported interventions fell within a range that might be considered “average.”

6.5 Limitations of this analysis

As noted in Section 4, it was not possible to account for certain costs, particularly expenditure on the salaries of permanent staff and associated overheads for VMoET and GLED. As a result, the unit cost analysis does not reflect the full economic costs associated with COL-supported interventions. This is likely to have had an impact on the assessment of economy and cost-efficiency, which are impossible to quantify.

The cost-efficiency component of a traditional VfM review can be limited to the administrative costs incurred in implementing a programme, without taking into account the private and social costs to beneficiaries. However, the current study provided scope for participants to define inputs/ investments and outputs/impacts in their own terms, and then to provide their assessments within this framework. For this reason, it is more likely that the full range of inputs and outputs was captured.

At the same time, the qualitative nature of the assessment of outputs is also the greatest weakness of the BER methodology. The absence of objectively verifiable quantitative data makes it possible for sceptics to dismiss the findings of any such analysis as the subjective views of a group with a particular vested interest.

Finally, low cost-efficiency does not necessarily mean low cost-effectiveness, and vice versa. Higher unit costs may be necessary to improve the outcomes of an intervention. For this reason, it would be wrong to base decisions about preferred activities solely on criteria of economy, efficiency or cost-efficiency.

Despite these limitations, it is recommended that analyses of economy, efficiency and cost-efficiency should be carried out in all cases. At the same time, an effort should be made to identify clearly and, where possible, to address critical data gaps.⁵⁸

† As noted above, the latter intervention did not include travel and accommodation costs for the COL staff member, since these were not accounted for separately. This had the effect of reducing the unit cost of this activity and increasing its cost-efficiency quotient.

SECTION 7: EFFECTIVENESS AND COST-EFFECTIVENESS

Although learning can be intrinsically fulfilling, for most people, education is not an end in itself but rather a means to some other end — a better job, increased earning power, higher social status or an enhanced ability to perform functions in family, community, professional or other roles. This broader perspective is explicitly acknowledged in the impact statement for COL’s OS interventions, which states that the knowledge and skills acquired are intended to enable participants to lead “productive and healthy lives.”

In order to assess the value generated as a result of these interventions, it is necessary to look beyond their efficiency and cost-efficiency in producing outputs. In addition, we need to examine their *effectiveness* — the extent to which outputs are converted into outcomes and impacts. We also need to consider their *cost-effectiveness* — the expenditure required to achieve actual programme outcomes and impacts. However, this process is complicated by the fact that a number of activities may have contributed to a single outcome or, conversely, that a single activity may have resulted in a range of outcomes.

As an alternative to cost–benefit analysis, a cost-effectiveness review can be used, whereby the benefits of a particular intervention can be quantified but data are lacking to establish the monetary value of such changes. This is particularly useful for option appraisal exercises, where the costs of achieving the same, well-defined results are assessed for a number of different interventions or programmes.⁵⁹ When conducting an *ex post* evaluation, certain assumptions need to be made about how much change would have come about if the intervention had never taken place. However, in order to compare the relative cost-effectiveness of different activities after the fact, it is necessary to have comparable data on the outcomes under both scenarios.⁶⁰

As noted in Section 4, finding the necessary evidence to evaluate these aspects of COL’s support for the establishment of OS programmes in Vanuatu and Belize has proven to be particularly challenging. This section discusses the conclusions that can be drawn, with the limited data available, about the effectiveness and cost-effectiveness of these OS programmes relative to conventional education in these two countries. It also examines the application of these measures to the outcomes and impacts of the interventions financed by COL.

7.1 Effectiveness and cost-effectiveness of OS programmes in Vanuatu and Belize

As noted in sub-section 1.1, these interventions often involve multiple stages, with the outcomes of activities supported by COL feeding into a separate results chain for an entirely different group. The activities under review in this study were intended to build capacity among ministry officials, managers and academic staff responsible for developing and delivering OS programmes in these two countries. The expected outcome of the workshops and other activities funded by COL was to improve the quality of inputs provided to students themselves. Thus, while Section 6 of this report focused on economy, efficiency and cost-efficiency in relation to the outputs and

outcomes experienced by staff, this section requires consideration of outcomes and impacts for both beneficiary groups.

The SROI methodology is useful in helping to identify the wide range of outcomes that can arise from developmental interventions. The SROI Impact Maps for the OS programmes in Vanuatu and Belize (see Appendices E and F) illustrate how stakeholders understand these changes, by describing outcomes in statements that approximate their own words. For the purpose of analysis, these outcome statements have been grouped under different headings. For example, feedback from students on the effectiveness of the OS programme has been aggregated as follows:

- Enhanced teaching practice
- Improved ICT skills
- Increased professional motivation
- Monetary benefits
- Enhanced skills for OS management

The impact maps also require evaluators to identify indicators that can be used to measure outcomes, as well as sources that can be used for obtaining these data. In addition, there are columns for recording the quantity of change that has taken place, estimates of the duration of this change and financial proxies that can be used to assign value to outcomes.

Details of the findings of the staff surveys in Vanuatu and Belize have already been discussed in sub-sections 5.1.2 and 5.2.2, but they have been summarised in Table 9 for convenient reference

Table 9. Summary of outcomes for open school staff members (% of respondents to survey) in Vanuatu and Belize

Outcomes for Teachers and Other Staff Members	Vanuatu (n = 13)	Belize (n = 11)
Enhanced teaching practice	54–77%*	91–100%
Improved IT skills	N/A	100%
Increased professional motivation	77%	78–100%
Dissatisfaction/decreased motivation	15%	8%
Monetary benefits (spend less money)	23%	91%
Monetary liabilities (spend more money)	77%	55%
Enhanced skills for OS management (n = 1)	N/A	100%

*Variations in the percentages reported reflect differences in the number of responses to follow-up and open-ended questions that probed different aspects of the main outcome.

In order to assess the effectiveness of the COL-supported interventions, it is also necessary to analyse the outcomes and impacts experienced by past and present students of the two OS programmes. Responses to the student questionnaires were aggregated under the following headings:

- Enhanced learning experience
- Improved employment prospects
- Improved health for self and child(ren)
- Improved family relationships
- Improved social relationships
- Monetary benefits/liabilities

The responses to the online questionnaires for students provide insights into the effectiveness of these OS programmes in producing intended and unintended changes. However, since these have already been discussed at length in sub-sections 5.1.3 and 5.2.3, only a summary is provided in Table 10.

Table 10. Summary of outcomes for open school students (% of respondents to survey) in Vanuatu and Belize

Outcomes for Past and Present Students	Vanuatu (n = 12)	Belize (n = 34)
Enhanced learning experience	42–63%	76–82%
Decreased motivation to study, dropping out	12–55%	N/A
Improved employment prospects	92%	62–70%
Decline in employment status (loss of job in order to study)	N/A	3%
Improved health for self and child(ren)	58%	64–79%
Decline in health for self (e.g., stress)	0%	3%
Improved family relationships	36%	85%
Improved social relationships	33–50%	47%
Worse social relationships (e.g., alienation from peers)	8%	3%
Monetary benefits (spend less money)	42%	56%
Monetary liabilities (spend more money)	55%	44%

7.2 Effectiveness of COL-supported initiatives

Assessing the effectiveness of COL-funded activities involves examining the extent to which outcomes for staff members (summarised in Table 9) have been translated into outcomes for students (Table 10). However, in order to carry out a credible and reliable analysis, it is necessary to determine whether a given observed change is the result of other factors.

Many of the outcomes reported by teachers in Vanuatu and Belize can reasonably be ascribed to the acquisition of new professional skills through activities supported by COL, but it is unclear how much change should be attributed to these specific interventions. For example, it is difficult to isolate those attitudes and skills that were acquired during a particular training workshop from those developed through hands-on practice during the process of implementing the new OS programmes. In addition, it is possible that staff members took part in other professional development activities over the three-year time frame of this study that contributed to the reported changes. The ratings of the efficiency of COL-funded activities (discussed in sub-section 6.3) are likely to reflect respondents' views of their effectiveness in building professional capacity. Nevertheless, this still leaves the problem of determining the extent to which these intermediate outcomes (enhanced professional skills of staff members) contributed to the outcomes experienced by students.

Ideally, we would need to identify examples of the counter-factual situation in order to determine the effectiveness of these COL-supported interventions. This would involve collecting data on the outcomes experienced by students at comparable schools in Vanuatu and Belize, where the staff did not benefit from such workshops and other professional development activities. These data could then be compared to the information obtained from students in the respective OS programmes in order to determine which programme/institution produced the most positive outcomes. Unfortunately, no comparable data were found to provide insights into the outcomes experienced by students in conventional schools in these two countries. Thus, in the absence of a common outcome measure, it is impossible to draw any hard-and-fast conclusions about the effectiveness of OS relative to the alternatives.

It is even more difficult to measure the effectiveness of these interventions in producing impacts on students' lives. For example, we can assume that those who pass their examinations at the end of their final year in an OS programme (output) have improved prospects for finding a better-paying job (outcome). It has been argued that the voluntary nature of second-chance education and the relative lack of support when one is learning at a distance encourage the development of self-discipline and self-reliance, which do not always arise from classroom-based studies. This may give OS graduates an edge when competing with their counterparts in the local labour market. Nevertheless, without additional data, it is impossible to say how many actually find employment and how their earnings compare with those of graduates from high schools. Comparative tracer studies of past students from both open and conventional schools would be useful in establishing the relative effectiveness of different modes of educational provision.

7.3 Effectiveness in improving equity

One noteworthy exception to the data limitations discussed above relates to the issue of equitable access and participation in education, particularly for girls and young women, which is a key component of the impact and outcomes statements for COL's OS programme. In this case, sufficient information can be obtained from reports available on the websites of the education ministries in Vanuatu and Belize to facilitate an assessment of how effective the OS programmes in these two countries have been in promoting equity.

As noted in sub-section 5.1, roughly 1,800 young ni-Vanuatu leave school each year before completing Year 10. As the lack of educational qualifications hampers their search for employment, these young people are likely to be socio-economically disadvantaged for the remainder of their lives. Thus, any programme that enables them to complete the junior/lower cycle of secondary education will have some impact in terms of ensuring more equitable access to further education and training and the labour market. While enrolments in the pilot phase of Vanuatu's OS programme are quite small, once it becomes fully operational and reaches its target numbers, it should be able to provide second-chance learning opportunities for all young people who currently do not attend junior or senior secondary schools. The data on the number of female students and Year 10 completers who took part in the pilot phase are incomplete, so no conclusions can be drawn about the effectiveness of the OS programme in addressing gender equity in Vanuatu's education system.

GLED was established specifically to target those who dropped out or could not afford to complete high school. Its projected enrolment of 600 students per annum represents only a fraction of the total potential market for second-chance education. However, now that its teaching and learning materials are available online, there is scope for expanding the reach of the OS programme beyond the confines of Belize City by facilitating enrolments across the country. This would go a long way towards ensuring more equitable access to high school education for the nation as a whole.

Girls outnumber boys at secondary and post-secondary levels in Belize's education system. Table 5 indicates that the same is true at GLED, where up to two out of every three students are female in some year cohorts. Young women also appear to do better than their male counterparts in the final year examinations. While the Gender Parity Index at conventional secondary schools fluctuated between 1.15 and 1.18 from AY 2010/11 to AY 2011/12,⁶² the comparable figures at GLED were 1.44 and 1.65. This suggests that the OS programme (and the evening classes that were offered prior to its inception) have been highly effective at addressing the need for second-chance education amongst young women. However, in the Belize context, the reality is that achieving gender equity requires that special attention be given to attracting and retaining more male students.

7.4 Cost-effectiveness of COL-supported initiatives

As noted above, cost-effectiveness analysis is particularly suited to interventions where the benefits can be quantified but not necessarily expressed in monetary terms. However, the data requirements

and analytical methods are more demanding, making it necessary to be realistic about what can be measured with confidence.⁶³ These challenges are made more formidable in this case for the following reasons:

- First, as noted in the preceding sub-section, it is difficult, if not impossible, to trace a particular outcome to a single activity, its related inputs and, thus, the associated costs.
- Second, the activities supported by COL represent only a portion of the inputs and processes required to establish a new OS programme.
- Third, this initiative has resulted in a multiplicity of outcomes and impacts, not only for those who took part in the COL-supported activities, but also for other stakeholder groups.
- Fourth, these impacts are likely to be experienced over a long time-horizon – ten years or more.
- Finally, and perhaps most importantly, there are serious gaps and deficiencies in the data available to establish both the extent of the observed changes and their monetary value.

Finding financial proxies in order to assign monetary values to these outcomes proved equally difficult. While SROI studies in countries of the global North have access to extensive repositories of socio-economic data, this is not always the case in low-income countries. Despite an extensive web search of possible sources, it proved impossible to locate data sets to use as financial proxies for most of the mapped outcomes. As a result, the cost-effectiveness of these OS programmes could not be determined empirically.

However, if we assume that the OS programmes are at least as effective as conventional high schools in translating outputs into outcomes, then the former would be significantly more cost-effective, given the differences in cost-efficiency. Thus, for example, if the same percentage of graduates from the OS programme as from conventional high schools finds well-paid employment, then it would be fair to suggest that open schooling is between 60 per cent (in Vanuatu) and 371 per cent (in Belize) more cost-effective than classroom-based secondary education.

It was only possible to establish financial proxies for a relatively small number of outcomes, and these are discussed in greater detail in the following section of this report. Nevertheless, for all of the reasons outlined above, it was not feasible to carry out a cost-effectiveness analysis of the COL-supported interventions on an activity-by-activity basis.

7.5 Limitations of effectiveness and cost-effectiveness analysis

Effectiveness calculations can provide an indication of the relative magnitude of outcomes that come about through different activities, whilst cost-effectiveness analysis is useful for comparing the unit costs of alternative ways of achieving the same set of defined impacts. However, both are only possible when outcomes and impacts can be measured in the same units. As indicated above, the main limitation for this study is the absence of a common metric (such as money) to quantify outcomes and impacts across the range of different dimensions for which education is expected to

produce benefits.⁶⁴ However, based on the analysis of cost-efficiency in sub-section 6.4, it is still possible to draw inferences about the relative cost-effectiveness of the OS programmes in Vanuatu and Belize.

A second limitation is the short-term nature of the effects that can be measured with the tools and data available for most cost-effectiveness analyses, whether using a model to simulate outcomes before adopting a particular option or analysing data from impact evaluations. In the latter case, reliable measurements of the changes that can be attributed to a particular intervention would require two well-timed rounds of survey data with distinct beneficiary and control groups.⁶⁵

Even where such data are available, the difficulty of finding credible monetary proxies for the benefits of education limits the scope of cost-effectiveness analysis. Inevitably, cost-effectiveness analysis tends to highlight the direct outcomes of educational interventions, which can be easily quantified, whilst overlooking externalities, such as enhanced gender equity. However, in the case of the two OS programmes under review, the relatively small numbers of students who will pass through them over a ten-year period are unlikely to have a statistically significant impact on a national scale.

SECTION 8: COST–BENEFIT ANALYSIS

Whereas cost-effectiveness analysis can be useful when comparing the costs of alternative ways of producing the same or similar benefits, cost–benefit analysis (CBA) quantifies in monetary terms as many of the economic costs and benefits of a proposal as feasible.⁶⁶ Both can be undertaken using the SROI methodology. A second difference is that rather than focusing exclusively on the period during which inputs are made, CBA normally covers the full time horizon over which costs and benefits can be expected to occur — up to 20 or 30 years are often used, depending on the nature of the benefits.⁶⁷

When CBA is used for an *ex post* evaluation, as in this study, projections of the actual economic costs and benefits are compared to the counterfactual situation — that is, what would have occurred if the interventions had not taken place and the programme had never been implemented. The assumptions and evidence used to underpin these projections has already been discussed in Section 4. The present section offers the results of an SROI analysis of costs and benefits, along with an assessment of the validity of these assumptions through sensitivity and break-even analyses.

8.1 SROI analysis of costs and benefits

The SROI methodology yields two key indicators: the net present value (NPV) of the programme and the SROI ratio. The NPV figure is derived by subtracting the discounted value of total inputs (costs) from the discounted value of total impacts (benefits) and represents the value added as a result of the intervention. The SROI ratio is an alternative way of expressing the same information but is derived by dividing the present value of impacts (discounted value of total impacts/benefits) by the present value of inputs (discounted value of total inputs/costs). An SROI ratio of 1.50, for example, indicates that goods or services to the value of one and a half currency units have been generated for each currency unit invested in the programme.

8.1.1 SROI ratio for OS programme – Vanuatu

As discussed above, no financial proxy was found to value the earnings premium that “graduates” of the OS programme in Vanuatu can expect to achieve. Since this is the primary direct economic benefit arising from education, the absence of a credible monetary value for this impact skews any further analysis of costs and benefits. Nevertheless, the calculations were made to determine the net present value of inputs and impacts, as well as the SROI ratio for the OS programme in this country, and these are shown in Appendix E. Predictably, the SROI ratio is negative, but this simply reflects an inability to account for the most significant, direct benefits of the programme.

COL’s contribution currently amounts to less than 1.4 per cent of the total inputs required to enable the OS programme in Vanuatu to operate over a ten-year period.

8.1.2 SROI ratio for OS programme – Belize

Because key data were available to estimate an earning premium for “graduates” of the OS programme at GLED, the cost–benefit analysis of this intervention appears to be considerably more

credible. After discounting projected inputs and impacts over a period of ten years, the NPV of the intervention was found to be PPP USD 21.6 million. The SROI ratio was 8.59 to 1.00, which means that for every Belize dollar (or other currency unit) expended on this programme, more than eight and a half Belize dollars of value were generated.

To date, COL's contribution to this intervention has amounted to just over 4.0 per cent of the total inputs needed for the GLED OS programme to operate until June 2023. When the SROI ratio was calculated only for COL's inputs, it was found that almost CAD 214 in value were produced for every Canadian dollar that COL invested.

8.2 Sensitivity and break-even analyses

As discussed in sub-section 4.4, a sensitivity analysis is required to assess the extent to which the results would change if assumptions made during previous stages of the SROI review proved to be inaccurate. An alternative approach is to determine how much change would be required in a particular variable to reach the break-even point, where the value of benefits begins to outweigh the costs. The probability that the changes needed to reach the break-even point will come about is then assessed to determine how likely this might be.

8.2.1 OS programme – Vanuatu

As noted above, it proved impossible to find any data on average income for persons with different levels of educational attainment in Vanuatu.

However, it was still possible to determine the break-even point by calculating how much more graduates of the OS programme would need to earn compared to other young people who do not complete their Grade 10 certificate. Let us start by assuming that each graduate of the OS programme in Vanuatu will find waged employment at the same rate as other persons 15 years of age and older (the employment-to-population rate of 30.3 per cent).⁶⁸

Once this condition is met, each OS graduate will need to earn VUV 61,773 per annum* more than their counterparts who did not finish their education in order for the intervention to reach a break-even point. Given that average household expenditure in Vanuatu was VUV 54,700 per month in 2012, such a difference in annual earnings appears quite reasonable. This suggests that the OS programme in that country is generating real value for participants and that the SROI ratio is more likely than not to be positive.

8.2.2 GLED OS programme – Belize

In the case of Belize, the sensitivity analysis indicates that the benefits of the OS programme are robust and capable of surviving significant shifts in the parameters assumed.

Increased annual and lifetime earnings for graduates

According to data from the September 2014 *Belize Labour Force Survey*, the median salary for persons with secondary education is PPP USD 3,043 per year higher than for those who only

*This is the equivalent of PPP USD 541 per annum. In 2013, the yearly GNI per capita for Vanuatu was PPP USD 2,870. Thus, the additional amount that OS graduates would need to earn would be the equivalent of about two and a half months of the average income.

completed primary school. The additional income earned by GLED “graduates” would need to fall to a mere PPP USD 307 per year (roughly ten per cent of the actual value) in order to reach the break-even point. Alternatively, the estimated duration of this earnings premium would need to be reduced from the figure of 20 years used in the calculations to just under two years. Both of these eventualities are considered highly unlikely.

Deadweight

Deadweight is the term used to describe calculations that attempt to compensate for the amount of a particular outcome that would have come about if the intervention in question had never taken place. A true measure of the impact of the OS programme at GLED would involve a comparison of outcomes before the online materials were introduced with the outcomes that have been achieved since then. However, as noted earlier, the pass rate for final year students at GLED has actually declined marginally since the OS programme was implemented. Nevertheless, by turning out graduates with high school qualifications, the OS programme is still generating outcomes that have significant value for Belize.

In order to derive a suitable figure for deadweight, it is necessary to make certain assumptions. If GLED did not exist, perhaps half of its students would seek alternative ways of completing their secondary education, either by re-enrolling in a conventional school or by attending another adult education centre. Let us further assume that the completion rate with alternative providers is the same as the benchmark for the country as a whole, which averaged 66.2 per cent for the AYs 2012/13 to 2014/15.⁶⁹ These assumptions would result in roughly a third (50 per cent x 66.2 per cent = 33.1 per cent) of all existing GLED students receiving a CSEC or GED. The average graduation rate at GLED since the online materials were introduced has been 63.8 per cent. The calculation for deadweight would then be 33.1 per cent ÷ 63.8 per cent = 51.9 per cent. This latter figure was used in the SROI calculations for Belize.

In order to reach the break-even point, the proportion of existing GLED students seeking alternative ways of completing their secondary education would need to increase to almost 94 per cent. Alternatively, the pass rate at GLED would need to drop to less than 34 per cent. Again, both of these scenarios are thought to be highly unlikely.

Attribution

For the SROI calculations, it was assumed that the earnings differential enjoyed by GLED graduates results from their successful completion of the OS programme there, and that none of this impact can be attributed to other causes. The estimate for attribution would need to change from the zero per cent used in the calculations to over 90 per cent. The latter figure would mean that unspecified factors other than the OS programme were almost entirely responsible for increased earnings by graduates — a wholly improbable proposition.

Drop-off

In certain situations, the outcome or impact of a particular intervention will progressively decline over a period of years, and this is referred to as drop-off. The projection for drop-off used in the

SROI calculations for increased earnings was nil. This figure would need to increase 33 per cent to reach the break-even point. This would mean that the income premium would decline each year for up to four years, after which it would disappear entirely. This seems extremely unlikely, as candidates with a high school education enter the career ladder at a higher point than their counterparts with only a primary education, and the resulting differences in income typically persist until retirement. In many countries, those higher up the career ladder benefit more when general wage increases are introduced by employers, as these are normally calculated as a percentage of existing salaries.

Students and staff spending less

A certain percentage of both students and teachers/staff reported that they had spent less since the OS programme had been introduced, because they made savings on childcare expenses, transport, meals and other things. These savings were treated as a benefit. However, even if no savings had been made, the SROI ratio would have remained positive.

Additional hours worked by GLED staff

Seventy-eight per cent of respondents to the survey for GLED staff indicated that they had been spending more time at work since the OS programme was introduced. On average, they estimated that they spent 29 additional hours per week on their duties, without receiving any extra remuneration. For the SROI calculations, their contribution was valued at the standard hourly rate used by GLED to pay part-time teaching staff. Treating this as a monetized input demonstrates that it would be possible to pay staff for the additional hours they work without changing the SROI ratio.

Student fees

Currently, the level of student fees charged at GLED covers only about a third of the full economic costs of running the OS programme, whilst the remainder are cross-subsidised from other sources. However, in calculating the SROI, student fees and financial contributions from other sources were both treated as inputs, with the former subtracted from the latter to avoid double counting. This means that even if GLED were to increase fees to cover the full cost of the OS programme, this would simply have the effect of decreasing the level of subsidy from other sources. It would have no impact on the SROI ratio.

Discount rates

In line with project appraisals for UK government agencies, a discount rate of 3.50 per cent was used to calculate the present values of inputs and outcomes/impacts for this study. However, as the conclusions drawn may be affected by the percentage chosen, a sensitivity analysis was conducted on this part of the calculation. A discount rate of 100 per cent was used to test this assumption; such a rate means that beneficiaries would prefer to take a cash payment of CAD 100 now, rather than waiting a year to receive goods or services worth CAD 200. This rate is extremely conservative and would typically only apply in situations where there is extreme uncertainty about the future (e.g., during war time). Nevertheless, even if a discount rate of 100 per cent had been used, the SROI ratio would still be positive, in the order of 2.35 to 1.00.

8.3 Limitations of cost–benefit analysis

In general, cost–benefit analysis is considered a more comprehensive and robust approach to programme appraisal and evaluation than cost-effectiveness analysis, because it takes in a wider range of costs and benefits over the full lifespan. A CBA exercise demands a level of scrutiny that can expose shortcomings in programme design or sustainability that might otherwise be overlooked. However, the approach also has some significant limitations:

- The modelling of inputs and outcomes underpinning CBA can be very time-consuming and resource intensive. Such an exercise can only be justified when the size of the investment is substantial, when the main costs and benefits are amenable to quantitative analysis, and when both the data and the need for such an analysis are available.
- Due to inevitable data limitations, CBA relies heavily on a significant number of assumptions. This is acceptable as long as the basis for such assumptions is fully explained and rigorously substantiated using evidence from national, regional and/or international experience. Even so, questions arise as to how credible such assumptions are, especially when they are drawn from evidence in other countries where contexts and conditions may be very different.
- In the absence of credible evidence, there is a risk of falling into the common trap of arbitrarily varying assumptions until the analysis produces a net present value or SROI ratio that seems to justify the investment.⁷⁰

Because of the limitations in the data, the above analysis accounted only for individual, monetary benefits, which correspond to cell A.1 in Figure 4. It was not possible to assign credible values to all of the non-market benefits or externalities that were documented in the SROI analysis. However, given the global evidence of SROI in education, it would be safe to conclude that the total benefits arising from these OS programmes were significantly higher than what can be documented here.

CONCLUSIONS AND RECOMMENDATIONS

This study set out to determine whether the Commonwealth of Learning is achieving value for money in relation to the financial supports and other inputs it provided during FYs 2012/13 to 2014/15 to assist in establishing new open schooling programmes in Vanuatu and Belize. A number of questions were posed, and the answers to those questions are summarised below.

What impact have these supports had to date?

COL's investment has already yielded some significant results. New OS programmes have been established in two countries, and one of them has integrated the use of ICT and OER in its operations. To date, roughly 319 out-of-school youths and adults have successfully obtained secondary education qualifications that will enable them to find better-paying jobs. Although there are insufficient data to draw any conclusions about the gender balance of students who successfully completed the OS programme in Vanuatu, more than six out of ten of the OS "graduates" in Belize were female.

It is important to note that these results should not be attributed solely to the inputs provided by COL. A number of other key stakeholders (students themselves, staff in the host institutions and national governments) are also making significant contributions to the success of the OS programmes, in the form of money, time and effort. As a proportion of the total inputs required to sustain these programmes until 2023, COL's contribution to date amounts to less than 1.4 per cent in Vanuatu and just over 4.0 per cent in Belize.

Do the long-term benefits of these interventions outweigh the costs and, if so, to what extent?

When the values of the inputs and impacts of the OS programmes were analysed over a ten-year period using the SROI approach, benefits were found to outweigh costs, in some cases very substantially. Although the absence of any data on the increased earning power of completers in Vanuatu made it impossible to carry out a reliable analysis, it is more than likely that the benefits accruing to individuals and the country as a whole will exceed costs. In the case of Belize, the OS programme will generate a net present value of over PPP USD 21 million for stakeholders over a ten-year period, achieving an SROI ratio of almost 8.6 to 1.0. For every Canadian dollar that COL has invested in the OS programme at GLED so far, more than 200 Canadian dollars of value will be generated by 2023.

An assessment of the sensitivity of this SROI analysis of costs and benefits to invalid assumptions and unanticipated future events indicates that the conclusions regarding the OS programme in Belize are robust and capable of surviving significant shifts in the parameters assumed.

Have the initiatives supported by COL resulted in outcomes and impacts apart from those that were expected?

The SROI Impact Maps shown in Appendices E and F document a wide range of outcomes and impacts for the OS programmes in Vanuatu and Belize, respectively, and more details can be viewed in the findings of several online surveys summarised in Section 6 of this report. In terms of the

outcomes specified in COL's *Three-Year Plan for 2012–2015*, more learners, particularly girls, have access to learning opportunities. Both learners and tutors/teachers believe that the quality of the learning experiences available through these OS programmes has been enhanced in a number of ways. Many students also believe that participating in these programmes has had a positive impact on their health and that of their children. Outcomes and impacts other than the ones anticipated by COL are discussed below.

Have these outcomes/impacts been positive or negative for the ultimate beneficiaries?

In addition to the expected outcomes, the surveys highlighted how OS has impacted the lives of participants in a number of ways. Most of the respondents reported unanticipated positive outcomes since the OS programme was introduced. For students, these included increased motivation to learn, enhanced self-image, improved employment prospects, better family and social relationships, and cash savings. Tutors reported increased professional knowledge and skills, improvements in confidence and skills when using ICT (at GLED), and greater motivation and enthusiasm for teaching.

The introduction of OS programmes in Vanuatu and Belize also had some unanticipated negative impacts, but in general, the numbers reporting these outcomes were very low. Some student respondents indicated that they had lost or had to give up a job in order to study, that they felt more isolated from their peers when studying at a distance, and that they experienced increased stress when trying to balance the demands of studying with their other responsibilities. Two staff respondents indicated that they were dissatisfied because of the amount of work required to implement the OS programme, and the belief that they were not adequately compensated for changes in their conditions of service. Significant numbers of both students and staff indicated having to spend more money since the OS programme was introduced. However, much of this additional spending seems to be associated with the purchase of personal laptops or similar devices that are being used to enhance the teaching and learning process.

What are the most cost-efficient and cost-effective ways of supporting the development of open schooling throughout the Commonwealth of Nations?

There were considerable variations in the unit costs of COL-funded capacity-building activities; these ranged from less than two to more than 200 PPP USD per participant hour.

When participants' perceptions of the relative impact of each activity were plotted against unit costs, certain patterns emerged. In general, the most cost-efficient activities were online webinars and peer-to-peer interactions. Workshops organised on the site of the open school itself and facilitated by local experts or COL staff members also had high cost-efficiency quotients. Regional or international workshops facilitated by outside experts tend to incur relatively high unit costs without necessarily producing greater outputs.

However, the cheapest activity is not always the most effective. For example, the lowest cost per participant hour was incurred for sponsoring staff from Vanuatu and Belize to enrol in an eLearning certificate programme with the Open Polytechnic of New Zealand. However, given the number

of nominees who failed to take up this opportunity and the number who did not complete the programme, the effectiveness of this activity in producing the expected outcomes was reduced. Because of the inability to find financial proxies for many of the outcomes of COL-funded activities, it was not possible to determine their cost-effectiveness empirically. However, it may be permissible to infer the relative cost-effectiveness of different activities from the results of the basic efficiency resource analysis summarised in Figure 6.

Recommendations

1. The consultant has expressed very serious concerns about the mid- to long-term sustainability of the two OS programmes under review, since the I&E projections indicate that they are both operating with significant deficits and will continue to do so for the foreseeable future. As a matter of urgency, managers in both of these jurisdictions should review the cost projections made by the consultant and take whatever action is necessary to balance the books. In future, it may be advisable for COL to insist that potential partners carry out such an I&E projection exercise before COL makes any commitment to support the establishment of a new open school.
2. This study has found that the OS programmes in both Vanuatu and Belize are considerably more economical when it comes to providing educational inputs for learners who cannot be accommodated in conventional schools. These programmes are also more cost-efficient in producing “graduates” than traditional approaches based on teaching in the classroom. In addition, this VfM review has documented the significant value that is generated for Belize’s economy by the OS programme at GLED. These findings should be used to lobby the ministries of education in these two countries in order to secure increased financial support for these initiatives, as a way of ensuring their long-term sustainability. There is also scope for building upon the existing OS programmes to expand access to secondary schooling in both Vanuatu and Belize, which should result in even greater cost-efficiency through economies of scale.
3. Such partnership agreements should specify the types of data that will need to be provided to facilitate efficient monitoring and evaluation. At a minimum, this should include statistics on student enrolments by level, gender and academic year, and the number of final-year students by gender who successfully complete the programme or pass external examinations. Ideal would be provision for before-and-after surveys of students and for tracer studies of past learners. If these were included at the planning stage, they would enable partners or national governments to put in place the systems required to collect, compile and report relevant information consistently.⁶⁹
4. Likewise, COL should devise a standard means of recording basic data on workshops or other activities it supports financially. This should include the starting and ending dates for the workshop or activity, the name of the facilitator, the duration in days, the number of persons attending each day or session, the number of hours spent in contact sessions (excluding breaks and free sessions for sightseeing and/or shopping), and standardised,

quantitative feedback from participants about their perceptions of outcomes. Ideally, each activity should have a unique identification number to allow all expenditure to be tracked easily and to eliminate confusion that can arise when activities have similar titles.

References

- 1 SROI Network, *A Guide to Social Return on Investment* (Liverpool, UK: Social Return on Investment Network, January 2012), 84–85, http://socialvalueuk.org/publications/publications/cat_view/29-the-guide-to-social-return-on-investment/223-the-guide-in-english-2012-edition; Glen M. Farrell, *Results-Based Monitoring and Evaluation at the Commonwealth of Learning: A Handbook* (Vancouver, Canada: COL, 2009), 40, Table 2, http://www.col.org/PublicationDocuments/pub_MEHandbook_web.pdf.
- 2 The other components were: teacher education, higher education and the Virtual University for Small States of the Commonwealth. Commonwealth of Learning, “Three-Year Plan 2012–2015: Learning for Development” (Vancouver, Canada: COL, 2012), 12–15, http://www.col.org/PublicationDocuments/TYP_2012-2015.pdf.
- 3 Professor Asha Kanwar, then Vice-President of COL, in the foreword to Farrell, *Results-Based Monitoring and Evaluation*, 5.
- 4 Ibid., 40, Table 2.
- 5 Kirston Brindley, “Open Schooling – Strategy 2012–2015: An Evaluation of the Strategic Objective – Build Capacity to Ensure Integration of Technology and OER” (unpublished document; Vancouver, Canada: COL, October 2014).
- 6 Ibid., 5.
- 7 Ibid., 31.
- 8 Anthony Hodges, Philip White, and Matthew Greenslade, *Guidance for DfID Country Offices on Measuring and Maximising Value for Money in Cash Transfer Programmes*. Toolkit and explanatory text. (London, UK: UK Aid, Department for International Development, October 2011), 16, <https://www.gov.uk/government/publications/guidance-for-dfid-country-offices-on-measuring-and-maximising-value-for-money-in-cash-transfer-programmes>.
- 9 Antinoja Emmi et al., “Value for Money: Current Approaches and Evolving Debate” (London, UK: London School of Economics, May 2011), 14, <http://bigpushforward.net/wp-content/uploads/2011/09/vfm-current-approaches-and-evolving-debates.pdf>.
- 10 Hodges, White, and Greenslade, *Guidance for DfID Country Offices*, 18–19.
- 11 Government of the Republic of Ireland, Department of Finance, Central Expenditure Evaluation Unit, *Value for Money and Policy Review Initiative: Guidance Manual* (Dublin, Ireland: Gov’t of the Republic of Ireland, 7 March 2007), 68, <http://publicspendingcode>.

per.gov.ie/wp-content/uploads/2011/11/VFM-Guidance-Manual-2007.pdf.

- 12 Hodges, White, and Greenslade, ‘*Guidance for DfID Country Offices*, 12.
- 13 Walter W. McMahon, “The Social and External Benefits of Education,” in *International Handbook on the Economics of Education*, ed. G. Johnes and J. Johnes (Cheltenham, UK: Edward Elgar, 2004), pp. 211–259.
- 14 Martin O’Donoghue, *Economic Dimensions of Education* (Dublin, Ireland: Gill & Macmillan, 1971), chapters 3 and 4.
- 15 McMahon, “The Social and External Benefits of Education,” 215.
- 16 Organisation for Economic Cooperation and Development, *Gender Equality in Education, Employment and Entrepreneurship: Final Report to the MCM 2012* (Paris, France: OECD, May 2012), 19, <http://www.oecd.org/employment/50423364.pdf>.
- 17 Ibid., 223.
- 18 McMahon, “The Social and External Benefits of Education,” 211.
- 19 Ibid.
- 20 Emmi et al., “Value for Money,” 14.
- 21 Andrew Natsios, *The Clash of the Counter-Bureaucracy and Development* (Washington, DC: Center for Global Development, July 2010), 3, http://www.cgdev.org/sites/default/files/1424271_file_Natsios_Counterbureaucracy.pdf.
- 22 Ibid., 37–38.
- 23 Ibid., 35–36, 39.
- 24 Emmi et al., “Value for Money,” 17.
- 25 Ibid., 4–5.
- 26 Ibid., 3.
- 27 Natsios, *The Clash of the Counter-Bureaucracy and Development*, 38–39.
- 28 Hodges, White, and Greenslade, *Guidance for DfID Country Offices*, 2–3.
- 29 Emmi et al., “Value for Money,” 15, quoting Olivier Vardakoulias of the New Economics Foundation.
- 30 Hodges, White, and Greenslade, *Guidance for DfID Country Offices*, 1, 19.
- 31 Emmi et al., “Value for Money,” 5.
- 32 Brian Cugelman and Eva Otero, *Basic Efficiency Resource: A Framework for Measuring the Relative Performance of Multi-Unit Programs* (Toronto, Canada: Leitmotiv & AlterSpark,

- September 2010), 2, http://www.alterspark.com/uploads/cugelman_otero_ber-whitepaper_v22.pdf.
- 33 Emmi et al., “Value for Money,” 23.
- 34 Cugelman and Otero, *Basic Efficiency Resource*, 4.
- 35 Ibid., 5.
- 36 Faiza Shaheen, *Degrees of Value: How Universities Benefit Society* (Liverpool, UK: New Economic Forum, Universities UK, and Universities Partnerships Programme, June 2011), <http://www.neweconomics.org/publications/entry/degrees-of-value>.
- 37 Daniel Fujiwara, *Valuing the Impact of Adult Learning: An Analysis of the Effect of Adult Learning on Different Domains in Life* (Leicester, UK: National Institute of Adult Continuing Education, 2012), http://socialvalueuk.org/publications/publications/cat_view/25-other-publications?start=10.
- 38 Social Value UK, “What Are the Social Value Principles?” (n.d.), <http://socialvalueuk.org/what-is-sroi/principles>.
- 39 The guidelines for SROI published by the New Economics Foundation divide the process into four stages, but all of the component steps are the same as prescribed in the SROI Network publication *A Guide to Social Return on Investment*. New Economics Foundation, *Measuring Value: A Guide to Social Return on Investment* (SROI), 2nd edition (London, UK: NEF, 2008), http://socialvalueuk.org/publications/publications/cat_view/25-other-publications?start=25.
- 40 SROI Network, *A Guide to Social Return on Investment*, 9–10.
- 41 Emmi et al., “Value for Money,” 23.
- 42 Government of the United Kingdom, HM Treasury, *The Green Book: Appraisal and Evaluation in Central Government* (London, UK: The Stationery Office, 2011), 19, paragraphs 5.10 & 5.11, http://media.wix.com/ugd/9ccf1d_dcfb0b96b7964b4ba0b9a40b07f78302.pdf.
- 43 Ibid., 20, paragraph 5.15.
- 44 Ibid., 57.
- 45 Ibid., 57–58.
- 46 Ibid., 24–25, 91–96.
- 47 Ibid., 92.
- 48 Ibid., 26.
- 49 Ibid., 99.

- 50 SROI Network, *A Guide to Social Return on Investment*, 69.
- 51 Hodges, White, and Greenslade, *Guidance for DfID Country Offices*, 36.
- 52 Government of the United Kingdom, *The Green Book*, 32.
- 53 ILO-IPEC and Statistical Institute of Belize, *Report on the National Child Activity Survey – Belize 2013*. (Geneva, Switzerland: ILO International Programme on the Elimination of Child Labour, 2015), 51, Tables 7.1 & 7.2, <http://www.sib.org.bz/Portals/0/docs/publications/other%20statistical%20reports/Child%20Activity%20Survey,%202013.pdf>.
- 54 Ibid., 52, Table 7.4b; 53.
- 55 Ibid., 53, Figure 7.1.
- 56 Government of the Republic of Vanuatu, Ministry of Education and Training, *2013 Annual Statistical Digest* (ASD) (Port Vila, Vanuatu: MoE Policy and Planning Unit, October 2014), 41, Figure 2–1, http://moet.gov.vu/docs/statistics/Annual%20Statistical%20Digest_2013.pdf.
- 57 Cugelman and Otero, *Basic Efficiency Resource*, 6.
- 58 Hodges, White, and Greenslade, ‘Guidance for DfID Country Offices on Measuring and Maximising Value for Money in Cash Transfer Programmes’, 30.
- 59 Ibid.
- 60 F. Ellis, S. Devereux, and P. White, *Social Protection in Africa* (Cheltenham, UK and Northampton, Massachusetts, USA: Edward Elgar, 2009), 86.
- 61 Hodges, White, and Greenslade, *Guidance for DfID Country Offices*, 30.
- 62 Ibid., 35.
- 63 Ibid.
- 64 Ibid.
- 65 Ibid., 35–36.
- 66 Government of the Republic of Vanuatu, National Statistics Office, *2009 National Population and Housing Census: Analytical Report, Volume 2* (Port Vila, Vanuatu: VNSO, n.d.), 111, Table 38, http://moet.gov.vu/docs/vnso/National%20Population%20and%20Housing%20Census%20Analytical%20Report%20-%20Vol%202_2009.pdf.
- 67 Parliament of Belize, “Approved Estimates of Revenue and Expenditure for Fiscal Year 2015/2016, as Approved by the House of Representatives on Friday, March 27th & by the Senate on March 31st, 2015” (Belmopan, Belize: Ministry of Finance, 2015), 89, 93, and 97, <https://www.mof.gov.bz/index.php/downloads/finish/3-budget/661-approved-budget-estimates-2015-2016>.
- 68 Hodges, White, and Greenslade, *Guidance for DfID Country Offices*, 39–40.
- 69 Ibid., 2–3.



4710 Kingsway, Suite 2500
Burnaby, BC V5H 4M2
Canada

Tel: +1.604.775.8200
Fax: +1.604.775.8210
E-mail: info@col.org
Web: www.col.org