Quantifying the Impact of Investment in Education

SOCIAL VALUE UK

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Contents

1 Introduction

There is plenty of research which argues that, overall, education leads to better outcomes for individuals and society. For example, improved job prospects, lower levels of societal inequality, higher tax income and fewer people experiencing unemployment. However, accounting for the specific social, economic and environmental outcomes from an investment in education remains a challenge, not only for governments, but also for any organisation which runs or invests in education programmes or initiatives. Without this information, it is difficult to make choices between different ways in which these outcomes can be achieved, and how best to design and deliver education activities.

One challenge is the time lag between the activity and the resultant outcomes can be many years. To know what the outcomes are for a particular group of people receiving education would require tracking the group (and a control group) over a long period of time. Even if this were possible, the information would not be available in time to make decisions to change or develop education programmes.

The answer to this challenge is to develop a theory of how your activities lead to longer term outcomes supported by research, and then collect data from at least some of those involved at different points in that theory, allowing organisations to take corrective action if they are not on track at an early stage.

The objective of this paper is to review some of the available research and provide guidance on how it can be used.

2 Social Value UK guidance

Social Value UK guidance is to:

Understand and evidence the outcomes

- Develop an understanding of expected and experienced outcomes with stakeholders, recognising that this may require reliance on people acting on behalf of the stakeholder group (e.g. parents of young people)
- Consider any unintended or negative outcomes which may be experienced by stakeholders
- Develop a chain of events between the activity and these outcomes, and collect sample data at different points to allow the organisation to check progress is being made
- Reference third party research that underpins the relationship between the activity and the future employment and earning outcomes, as well as the social outcomes which your stakeholders may experience

Value the outcome

- Involve stakeholders to assess the value in relation to other outcomes they may be expected to, or have experienced[1]
- Reference third party research relating to the value of these outcomes to stakeholders[2]

Whilst this approach can provide evidence and values for education programmes, the main limitation is that available research is often not specific to either a particular activity, a particular target group or context. Therefore, organisations should, over time, collect evidence relating to their own situation, both for more credible reporting and to provide timely information that can inform decisions with an aim to improving their programmes.

This paper focuses on research on the links between education and future earnings, and on other outcomes (particularly social outcomes) that can be expected to lead from education programmes.

There is considerable research into the **economic benefits of education**, both from the perspective of the individual and society more generally. There is also a growing body of evidence emerging that demonstrates the **social benefits of education**, which is essential if we are to have a true picture of the importance of education. Unfortunately, much of this evidence falls short of placing a financial value on the

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[1] More information on involving stakeholders is available at Supplementary Guidance on Stakeholder Involvement

[2] More information on creating well-defined outcomes is available at Supplementary Guidance on Understanding What Changes (Part One: Creating well defined outcomes)

social outcomes, which would go a long way in demonstrating the significant benefits that education brings to both individuals and society.

3 Economic benefits of education

In estimating economic benefits (market returns) of education, several methods are commonly used, including:

- Mincerian analysis
- Analysis of labour force statistics
- Economic impact assessment

The first two of these methods draw heavily on the theory of "human capital" – that there is a causal link between the knowledge and skills possessed by a worker and their economic productivity. Human capital can be enhanced through investments in education and training, giving an individual the skills needed to improve their productivity and find more highly-paid work. It may also be the case that a higher level of education leads to more training at work, as employers view more highly educated individuals as easier and cheaper to train.

The value of human capital is also recognised in "endogenous growth theory". Endogenous growth theory recognises that economic output and growth are related to development and improvement of products and production methods that enhance efficiency (i.e. innovation), in addition to human capital. If human capital recognises that education can enhance the productivity of individual workers, endogenous growth theory is a recognition that these individuals can in turn enhance efficiency and productivity at a system level. The view that levels of education facilitates innovation is supported by research by NCVER, which found that a lack of employee proficiency led to delays in developing products or services in 30.8% of organisations, and difficulties in introducing technological change in 38.4%. In addition, a lack of employee proficiency led to difficulties in adoption of new working practices in 41.9% of organisations surveyed.

Enhancements in human capital achieved through improved quality and increased length of education is strongly correlated with higher wages and a decreased likelihood of being under- or unemployed. This relationship between education, human capital and wages, means that the value of education can be estimated through analysis of wage differentials. In other words, if two otherwise identical workers have different levels of skills and knowledge gained through education, the market value of this education should (at least in theory) be represented by differences in wages.

3.1 Mincerian analysis

To investigate this relationship between education and wages, one of the most common techniques is to use Mincerian analysis. This analysis is built upon a basic model proposed by Mincer in 1974, in which wages are assumed to have a linear

relationship with the number of years spent in education, and years in the labour market (reflecting the skills and knowledge gained through work experience).

Figure 1. Estimated earning premium per year of additional schooling by geographical region (2014)

	Estimated earning premium per year of additional schooling		
Region	**Male**	**Female**	**Male and female**
East Asia and Pacific	9.2%	10.1%	9.4%
Europe and Central Asia	6.9%	9.4%	7.4%
Latin America and the Caribbean	8.8%	10.7%	9.2%
Middle East and North Africa	6.5%	11.1%	7.3%
South Asia	6.9%	10.2%	7.7%
Sub-Saharan Africa	11.3%	14.5%	12.4%
High income economies	9.5%	11.1%	10.0%
All economies	9.1%	11.4%	9.7%

Figure 1 shows the average increase in earnings associated with an additional year of schooling in different regions (adapted from the report "Comparable Estimates of Returns to Schooling around the World"), calculated using a typical Mincerian model. Figure 1 shows that, on average for all economies included in the analysis, an additional year of schooling is associated with an earning premium of 9.7% (i.e. a worker who has received one additional year of schooling will earn 9.7% more than a worker who has not). In high income economies, this figure is slightly higher at 10% per additional year of schooling. The highest wage premium was observed for Sub-Saharan Africa, with an average 12.4% wage premium per year of additional schooling, and the lowest premium observed in the Middle East and North Africa with a 7.3% premium. Variation is also observed within regions, for example, a 22.4% return in Rwanda, far above the average of 12.4% for the wider region of Sub-Saharan Africa.

Figure 1 also demonstrates a gender gap, with earning premiums for females higher than for males in all regions. As a global average, the difference in return per year is

2.3%, with the highest differential observed in the Middle East and North Africa at 4.6%, followed closely by Sub Saharan Africa with 3.2%.

Although a potentially useful tool, use of Mincerian modelling is not without disadvantages. Firstly, it needs to be established how much of a wage differential can be attributed to differences in human capital, and how much is due to other factors. Two workers with similar levels of human capital may be paid differently due to numerous factors, such as the profitability of the business they work for, union representation or whether they face gender or race-based discrimination. In addition, some compensation received by a worker may be non-monetary (such as good working conditions, flexible working hours or opportunities for promotion), and therefore not visible when looking at wage differentials.

There also exists an "ability bias" when looking at the impacts of education on wages – individuals more likely to spend longer in education may do so because of factors such as IQ, resilience or good social networks. These factors could lead them towards higher earnings regardless of whether they received more education or not. This ability bias can lead to the economic benefits of education being overestimated. To compensate for this, it has been suggested that IQ tests, or other variables could be used to represent individuals' "innate ability," although often this information is unavailable.

A further problem is that the basic Mincerian model assumes that the relationship between wages, education and experience is linear. However, in practice this relationship is "convex," due to higher demand for the most qualified workers, and a tendency for employers to pay workers based on achievement of accreditation milestones in education (such as completion of an A-level or degree), rather than the amount of time spent in education in and of itself.

In more sophisticated Mincerian models, the impact of these biases can be accounted for by extending the basic equation (which accounts only for the length of time spent in education and employment) to include explanatory or controlling variables (such as the level of in-job training received, economic profitability of a sector or IQ test results). Furthermore, the "convex" relationship between wages, education and experience, can be accounted for through use of dummy variables for completion of different education levels or milestones.

The information in Figure 1 is limited in its usefulness, as it gives an average figure for all types of education, including primary and secondary, vocational and academic. In practice, different types of education will give different returns, and one important distinction is that of education level.

Figure 2 Estimated earning premium per year of additional schooling by level of schooling experienced

Region	Estimated earning premium per year of additional schooling		
	Primary	**Secondary**	**Tertiary**
East Asia	13.6%	5.3%	14.8%
Europe and Central Asia	13.9%	4.7%	10.3%
Latin America	7.8%	5.4%	15.9%
Middle East and North Africa	16.0%	4.5%	10.5%
South Asia	6.0%	5.0%	17.3%
Sub-Saharan Africa	14.4%	10.6%	21.0%
High income economies	4.9%	6.6%	11.1%
All economies	11.5%	6.8%	14.6%

Figure 2 provides a breakdown of the average estimated earning premiums associated with primary, secondary and tertiary education. As a global average, the returns associated with an additional year of tertiary education carries the highest earning premium per additional year of schooling at 14.6%, followed by primary and secondary education at 11.5% and 6.8% respectively.

When considering the returns of different levels of education (primary, secondary and tertiary), it is important to consider that the sequential nature of education (that primary education must be completed before moving on to secondary, and secondary education must be completed prior to tertiary) means that the value of any given level of education will include that of the previous levels an individual has undertaken.

Differences in the quality and type of education within the same "level" of education must also be recognised. For example, a bachelor degree and an advanced diploma would be classed as tertiary level schooling, yet they provide different earning premiums. Figure 3 below illustrates some examples of this.

Figure 3. Estimated earning premium by highest qualification achieved (2011)

	Estimated earning premium (Males)					
	Basic function of education & experience	Basic function of education & experience (corrected for selection bias)	Adjusted for occupation	Adjusted for occupation (corrected for selection bias)	Further adjustments made for demography, labour market, training etc.	Further adjustments made for demography, labour market, training etc. (corrected for selection bias).
Bachelor degree or higher	71.2%	51.9%	44.1%	29.5%	38.9%	32.9%
Advanced diploma, diploma	36.8%	28.5%	23.2%	16.8%	17.7%	15.0%
Certificate III/IV	20.9%	14.4%	15.8%	10.3%	9.6%	7.7%
Certificate I/II NFD	-7.4%	-10.3%	-7.4%	-10.1%	-9.5%	-10.0%
Year 12	24.4%	19.3%	16.7%	12.6%	11.4%	9.7%
Highest qualification achieved	**Estimated earning premium (Females)**					
Bachelor degree or higher	58.1%	45.5%	33.8%	21.9%	24.5%	11.4%
Advanced diploma, diploma	30.4%	23.0%	18.8%	11.3%	12.6%	4.2%
Certificate III/IV	13.0%	7.2%	10.6%	4.3%	6.5%	-0.7%
Certificate I/II NFD	-5.9%	-6.5%	-5.9%	-6.6%	-8.9%	-10.2%
Year 12	17.8%	13.0%	12.1%	7.1%	7.0%	1.7%

Figure 3 displays the estimated earning premiums (as a percentage of annual earnings) for Australian workers due to education above a year 11 level (age 16-17 years old), calculated using several Mincerian models of analysis (adapted from the report "Education, earnings and the labour market"). Earnings premiums are calculated using a basic, unadjusted Mincerian model – a function of education and experience, with further estimates provided when adjustments are made for selection bias, occupation, demographics and combinations thereof.

The results demonstrate the basic, unadjusted Mincerian model consistently overestimates the benefits of education to wage earnings in comparison to models that adjust for factors such as selection bias, demography, labour market factors and so on. This means that wage premiums calculated using basic Mincerian models may be misleading. For example, achievement of a Certificate III/IV qualification by a female is estimated to carry a 13% wage premium when calculated using the basic function of education and experience. However, when adjustments are made for selection bias, occupation, training, demographics etc., this qualification may be associated with a 0.7% *decrease* in earnings.

The significant differences in wage premium estimates (even when measuring the wage impact of achieving the same qualification) observed between different models of analysis illustrates some of the difficulties associated with modelling these outcomes. Although the tables above give some indication of the average wage premiums associated with a) additional years spent in education and b) achievement of qualifications, a direct application of these values to your project would likely be problematic, as every project will be slightly different, both in terms of the education delivered, and the stakeholders involved.

3.2 Analysis of labour force statistics

A similar approach to Mincerian analysis involves explorations of employment statistics to observe the actual relationship between wages and levels of education. Analysis of Labour Force Survey datasets in the UK indicates that each additional year of education is associated with an earnings premium of around 8 to 9%. "The Labour Market Effects of Qualifications," found that holding a Level 1 academic qualification is associated with a wage premium of around 10%, and an academic qualification equivalent to an undergraduate degree a wage premium of around 80%, relative to having no qualifications.

Figure 4. Hourly wage by qualification level achieved in the United Kingdom (2015 Q1-Q4)

	Hourly wage			
	First-class degree or higher qualification		Qualification equivalent to GCSE level C or higher, but lower than first-class degree	
Percentile	Aged 25-29	Aged 30-59	Aged 25-29	Aged 30-59
10th percentile	£7.05	£8.45	£6.25	£6.53
Median	£12.36	£17.31	£9.21	£11.33
90th percentile	£23.08	£34.63	£15.93	£22.13

Figure 4 illustrates the hourly wages earned by those achieving an undergraduate first-class degree or higher, and those achieving a qualification equivalent to a level C GCSE or higher, but lower than a first-class undergraduate degree. It has been adapted from calculations published in The puzzle of graduate wages and is based on information published in quarterly Labour Force Survey 2015 (Q1-Q4).

Figure 4 indicates that an individual aged 25-29 who holds a first-class degree or higher earns a median wage £3.15 per hour higher than that of an individual with a qualification equivalent to GCSE level C or higher, but lower than a first-class degree (£12.36 per hour and £9.21 respectively). For individuals aged 30-59, this wage premium stands at £5.98 per hour. Much of this difference in wage premium between the age groups can be attributed to increased levels of work experience (as accounted for in Mincerian models).

As mentioned above when discussing Mincerian models, it is important to remember that much of the hourly wage received by a worker who holds a degree will be due to skills acquired during primary and secondary education. As such, if a project aims to assist an individual who has already completed primary and secondary education in achieving a degree, they would be wrong to assume that the total wage differential of their stakeholders was down to their intervention, as much of this would be attributable to the skills gained through previous levels of education.

Analysis of labour force statistics has the advantage of being based on empirical data, i.e. the actual wage premiums associated with improved length and type of education are revealed. Use of empirical data also avoids, to a large extent, the need for adjustments relating to demographics, occupation and so on involved in Mincerian analysis, but is dependent on statistics that are often unavailable, particularly for less developed economies.

3.3 Economic impact assessment

Finally, the economic impact of the education sector can be examined, just as we could any other sector. These studies consider (amongst other things) the impact of education spending on the number of full and part-time jobs that are directly generated through education spending (e.g. lecturers and university support staff), as well as jobs which are indirectly generated (e.g. supported in other sectors such as housing, transport or retail). Research by Universities UK revealed that, as of 2011/12, the total number of FTE university and higher-education sector employees was 319,474 (accounting for over 1% of total UK employment). Secondary employment due to universities was equal to a further 373,749 full-time jobs.

The output of universities must also be considered (output being the level of turnover/gross receipts for the sector). This was estimated to be £27.92 billion in the UK in 2011/12. This spending by universities has a significant knock-on impact on the economy, as it supports suppliers in different economic sectors (known as "indirect effects"). For example, spending by universities on office equipment will support businesses in the retail sector, which in turn will support businesses in the manufacturing sector and so on. This secondary output in 2011/12 was estimated to be £37.63 billion. Similarly, different economic sectors will be supported by university staff spending their wages on goods and services (the "induced effects").

In the Liverpool City Region alone, the total gross value added to GDP by the activities of the University of Liverpool in 2015/16 was estimated to be £652 million, accounting for 2.2% of the total economic output of the region. Total expenditure impact on the Liverpool City Region for 2015/16 was estimated to be £446, of which approximately £322 million was direct impact, £48 million indirect effects and £77 million induced effects.

Although assessment of this economic impact provides useful context, it is limited in that it does not value education in and of itself, merely the economic benefits of educational institutions when viewed as an economic sector like any other.

3.4 Things to consider when using in practice

When estimating the likely wage premiums associated with increases in education, where possible, it will be useful to compare third party research with your own primary research. This will involve collecting some data on wage levels being achieved following education and training, and comparing this with relevant local or regional data on wage levels.

It will then be possible to use sensitivity analysis to generate a range of possible value, that is expected to be, or has been created. However, the value from higher earnings won't be generated until they are actually achieved. Therefore, in the short to medium term, and to explore different options for delivering education programmes, information on other outcomes will be needed. These are explored in the next section.

The main risk involved in estimating changes in earnings, is that the research on links between education and earnings tends to be average data and may not be relevant for the group of people that are being targeted. For example, Figures 1 and 2 show average earning increases across very broad geographical regions, making it difficult to use in any practical decision-making scenario. Therefore, more detailed or context-specific evidence would be necessary.

Further, where education programmes target excluded groups, there is a risk that even with increased education these groups do not achieve the expected employment outcomes. In other words, vulnerable or otherwise disadvantaged people may experience poorer employment outcomes than the general population, even after receiving additional education and support. In this case, it would be more appropriate to compare the outcomes they experience with a similarly disadvantaged benchmark group, rather than the general population (on which the majority of research focuses). Sensitivity analysis can explore how effective the programme needs to be but some primary research will also be necessary.

3.5 Summary

To summarise, the economic benefits of education are well known, and associated with positive economic outcomes such as higher wages, lower unemployment rates and increased innovation. Measuring this generally involves analysis of theoretical relationships between wages, experience and education (i.e. Mincerian models), and analysis of existing labour force statistics. Mincerian models have the advantage of not being reliant on the existence of empirical data, but with the drawback of various adjustments being necessary to account for biases such as selection bias. Economic impact assessment (i.e. analysis of education as an economic sector like any other) can provide context, particularly for governments, but will likely be of limited usefulness as it does not consider the value of education in and of itself.

Even after adjustments have been made for biases, caution must be used when using data from third party research, as every project will differ in terms of stakeholders, teaching quality and local economic conditions etc. As such, organisations should only use third party research which has been calculated for a similar education type and stakeholder group to their own, and compare this with information they have collected from their own stakeholders.

4 Social outcomes of education

This section is discussed under the following headings:

- Social outcomes
- Valuing social outcomes

4.1 Social outcomes

Although information on the market returns of education investment will be critical for decision-making, information on other social (non-market) outcomes will also inform

design and choice of education programmes, and will often provide more timely information.

The social outcomes of education are varied. Figure 5 summarises some of the social outcomes which have been found to result from changes in education:

Figure 5. Summary of various non-market outcomes resulting from education

Outcome	Summary of research
Cognitive development and education level of one's children	Numerous studies indicate that the cognitive development and educational progress of a child are positively related to the education level of their parents. Parents who are educated beyond a high school level are more likely to be involved in their child's education, and have the skills to help with homework and coursework. The development of a child's early language, literacy and numeracy skills are also influenced by parental education levels.
	However, research into the education attainment of siblings in Norway suggests that the educational attainment of a parent, is far from the only factor which influences the attainment of their children.
Own health	Improved level of education has a positive relationship with levels of exercise, physical health and life expectancy. This may be due to improved understanding of health and diet, higher income and better working conditions. Research into the Danish education system found that additional schooling is associated with reductions in hospitalisation rates, reduced likelihood of smoking and reduced average BMI. Healthy choices and likelihood of vaccination are also associated with university education.
Health of children	The health and health-seeking behaviour of children is positively related with the education of their parents. This can be due to factors such as improved understanding of health and diet, and an improved likelihood (particularly in developing countries) of child immunisation. Improved education has also been found to decrease the likelihood of smoking during pregnancy, with an additional year of education relating to a reduction in smoking during pregnancy probability of 3%.
	Some studies on the relationship between parental education and child health have found that it may have only a small impact (e.g. Parental Education and Child Health: Evidence from a Schooling Reform). Other factors for child/parent health relationships may include genetics or "family culture".

| Consumer choice efficiency and savings | There is evidence that increased education enhances the efficiency of consumer choices made. For example, better educated individuals may find it easier to understand interest rates on consumer loans, or receive better prices for certain products. Money saved through improved consumer choices is likely to have a similar effect on wellbeing as would an increase in income.

There also exists a positive relationship between level of education and levels of savings made. Differences in type of savings have also been observed, with higher levels of education leading to a higher acceptance of risk in investment. Furthermore, highly educated individuals tend be more likely to save to receive capital gains and offset inflation, rather than to secure against emergencies. |
| --- | --- |
| Fertility/control over family size | Increased education results in changes to fertility, with female education associated with increased use of contraception, leading to improved ability to control family size and reduced fertility rates. The tendency for education leading to reduced fertility is observed in both developed and developing countries. The level of education of parents also impacts the fertility of their children, with the offspring of better educated parents displaying reduced rates of teenage pregnancy and fertility rates, and an improved ability to control their family size. |
| Wellbeing and life satisfaction | Improvements in wellbeing are associated with participation in education for both young and older people, with the Department of Health recognising that interventions can focus on "objectives around education and yet still achieve wellbeing benefits".

N.B. Social Value UK guidance would recommend avoiding "wellbeing" as a poorly defined outcome, which can create issues around measurement. For more information, please see our Supplementary Guidance on Understanding What Changes (Part One: Creating well defined outcomes). |
| Confidence | It has been suggested that increased education is related to improved levels of confidence. Increases in confidence may also impact levels of social cohesion by enabling individuals to more readily engage socially and politically. |
| Interpersonal trust | There is a positive relationship between education and interpersonal trust. According to the OECD, this may be due to education giving individuals the opportunity to meet others from different cultures and backgrounds and improving the likelihood of "embracing the values of social cohesion and |

	diversity". Improved education also increases the likelihood that an individual can afford to live in an area with low levels of crime and anti-social behaviour, further raising their levels of interpersonal trust.
Creation of new and strengthening of existing social groups	Education leads to a strengthening of social groups through creating opportunities to create new friendship networks and expand or repair existing or lapsed networks.

4.2 Valuing social outcomes

To make the best decisions regarding resource allocation, it is useful to know an estimate of the value created by achieving these outcomes. For example, if an organisation aims to improve confidence in a vulnerable group, would it be most cost effective to spend money on counsellors, or would more value be generated by giving individuals the opportunity to engage in an educational course? Considering finite resources, this information will encourage its most effective allocation, in addition to being directly comparable to studies into the market returns of education.

One of the simplest ways of valuing the social outcomes associated with education is to directly ask individuals how much they would be willing to pay to achieve those changes in their lives. For example, an individual could be asked how much extra they would be willing to pay for a course which would enhance their self-esteem by a certain percentage on a scale. For example, a 2012 Department for Business, Innovation & Skills research paper, found that individuals would be willing to pay £947 for a course which improves life satisfaction, and £847 for a course which improves knowledge or skills. It also found that individuals would be willing to pay £690 for a course which improves confidence in regards to family and others, and £826 for a course which improves happiness on a day-to-day basis.

An alternative method of valuing social outcomes is Wellbeing Valuation. This method makes use of large survey datasets, most notably the British Household Panel Survey. By analysing statistical relationships between levels of subjective wellbeing, life outcomes and income, estimates can be made as to how much more income would be needed to result in a similar change in wellbeing as would be experienced by a certain outcome. For example, if an income enhancement of £1,000 per year results in the same improvement in wellbeing as a 10% improvement in confidence levels, then we could say that this outcome (improved confidence) has a value of £1,000 per year.

The HACT Value Bank gives a range of Wellbeing Valuations which relate to the value of vocational training, participation in a government training scheme, employment training and general training for a job, for various stakeholder groups in the UK. Figure 6 shows the value of improved wellbeing resulting from participation in vocational training (i.e. Higher National Certificate, Higher National Diploma, youth

training certificate, or similar) and employment training that is provided by an employer or through a Job Centre scheme:

Figure 6. Wellbeing valuations of vocational training by stakeholder group (2016)

Training type	Stakeholder group	Value of training
Vocational training (i.e. Higher National Certificate, Higher National Diploma, youth training certificate, or similar)	Individual of unknown age and unknown geographical location in the UK	£1,123.86 per person per year
	Individual of unknown age and living in London	£1,798.18 per person per year
	Individual of unknown age and living in the UK but outside of London	£1,018.67 per person per year
Employment training (provided through workplace or a Job Centre scheme)	Individual of unknown age and unknown geographical location in the UK	£807.13 per person per year
	Individual of unknown age and living in London	£1,291.40 per person per year
	Individual of unknown age and living in the UK but outside of London	£647.46 per person per year

The HACT Value Bank also provides values for the increases in wellbeing associated with gaining full-time employment, part-time employment and self-employment. As extensive evidence exists for the improved employment prospects associated with education, an argument could be made for attributing a portion of this value to education.

4.3 Things to consider when using in practice

In practice, the stakeholders of each project will experience different outcomes, and experience them to a different extent. When using third party research, make sure that the group studied experienced a similar intervention to the one you are providing, had similar characteristics to your stakeholder group such as geographic location, socioeconomic status, age etc., and that the original research was published by a reputable source.

There is no set list that you can assume will apply to your stakeholders, so you will need to ask your stakeholders what changes they experience, and to what extent they experience them.

To help you map your stakeholders, the outcomes they experience and the ways in which these can be measured, the Global Value Exchange resource runs a free tool – myGVE. A sample project can be seen in Figure 7, showing your main 'Project

Board' and a range of stakeholder defined outcomes. On the 'Funders' tab you can also track the outcomes which your funder requires you to report against.

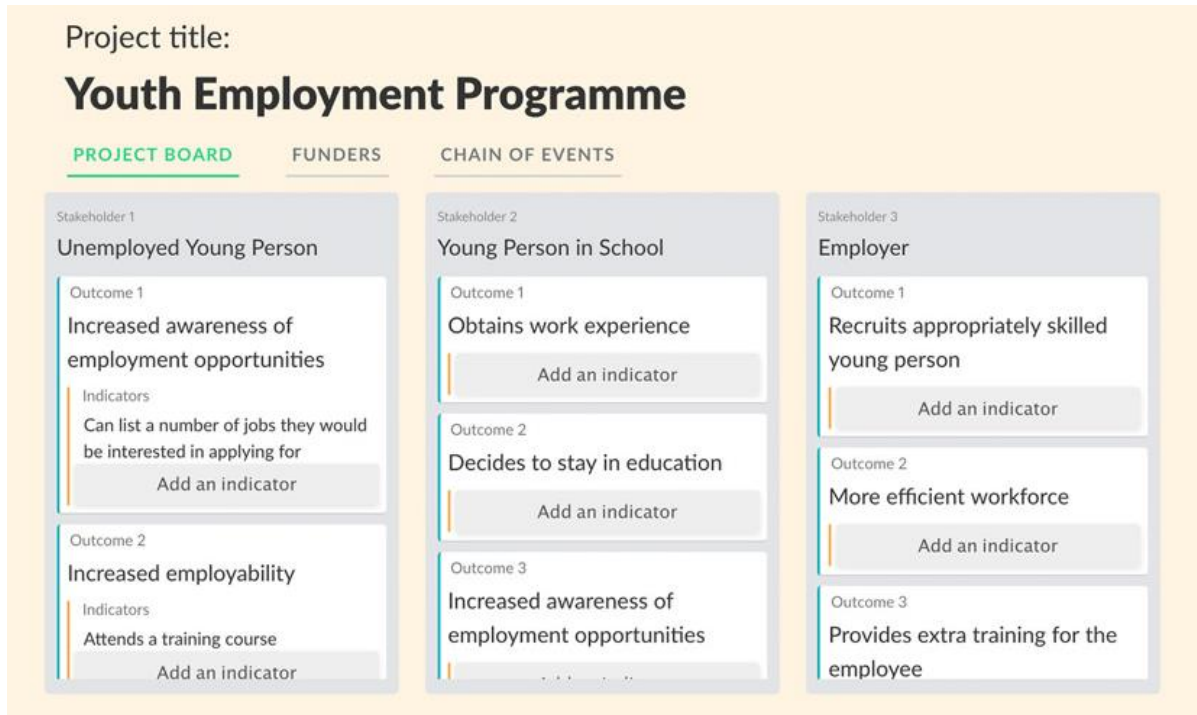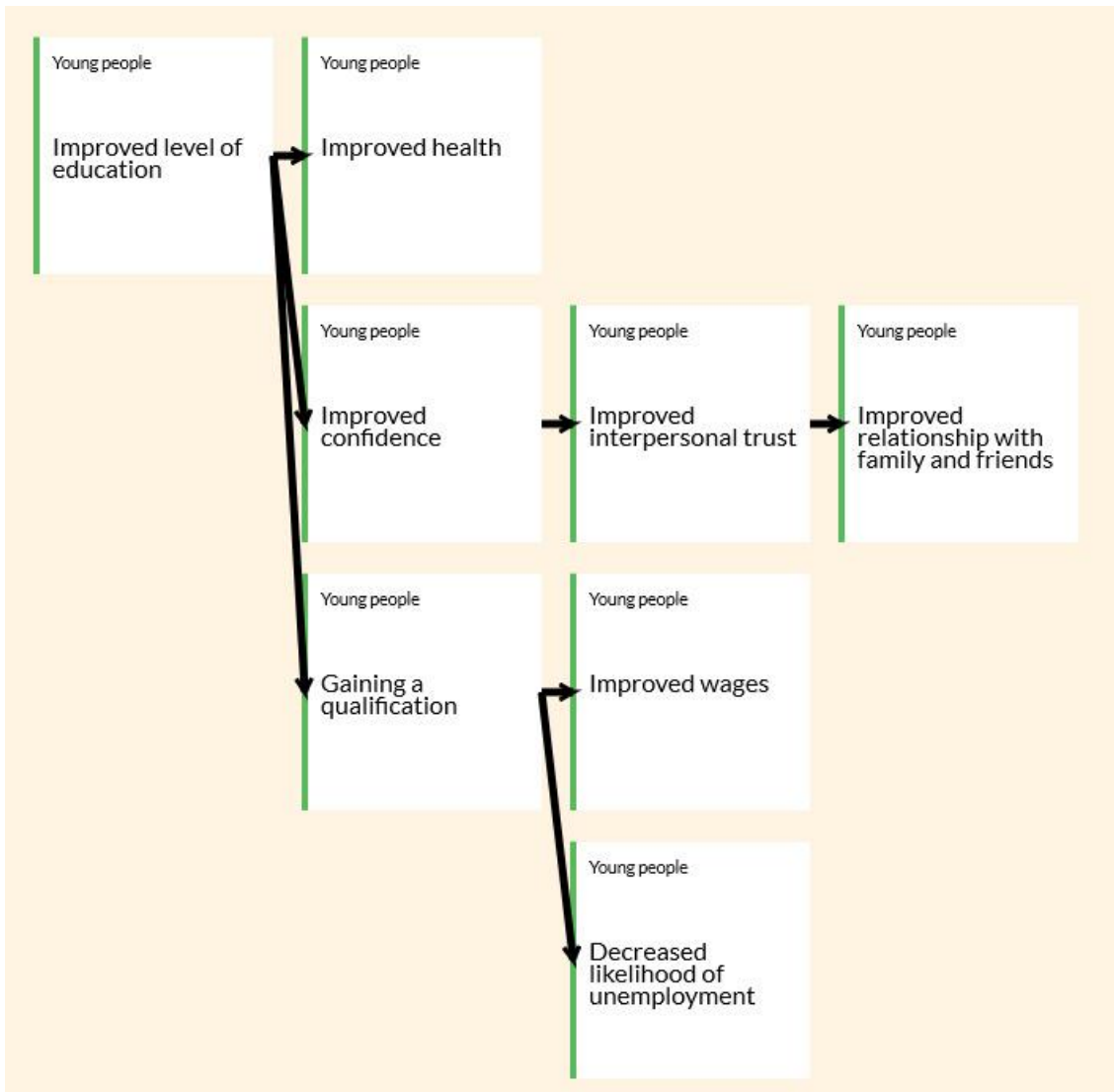**Figure 7. Sample myGVE project showing the project board for a hypothetical employment programme**

Project title:

Youth Employment Programme

PROJECT BOARD   FUNDERS   CHAIN OF EVENTS

Stakeholder 1	Stakeholder 2	Stakeholder 3
Unemployed Young Person	**Young Person in School**	**Employer**
Outcome 1 Increased awareness of employment opportunities Indicators Can list a number of jobs they would be interested in applying for Add an indicator	Outcome 1 Obtains work experience Add an indicator	Outcome 1 Recruits appropriately skilled young person Add an indicator
Outcome 2 Increased employability Indicators Attends a training course Add an indicator	Outcome 2 Decides to stay in education Add an indicator Outcome 3 Increased awareness of employment opportunities	Outcome 2 More efficient workforce Add an indicator Outcome 3 Provides extra training for the employee

Figure 8 shows a sample Chain of Events created in myGVE, visualising just some of the impacts resulting from a (hypothetical) project aimed at improving education. In practice, these outcomes will have been determined through stakeholder involvement, including any negative or unintended outcomes. myGVE is a free tool provided by Social Value UK, which is hosted on the Global Value Exchange resource. It allows users to plan and manage a project by adding stakeholder and funder defined outcomes and indicators, as well as create a chain of events to explore causal relationships between outcomes.

Figure 8. Chain of events for hypothetical education project

The initial outcome "Improved level of education," leads to both economic benefits (e.g. Improved wages and a Decreased likelihood of unemployment) and social benefits (e.g. Improved confidence and Improved interpersonal trust). The full impact of any education project will be a combination of different outcomes. These outcomes can be positive or negative, intended or unintended.

4.4 Summary

To summarise, social outcomes must be considered if we are to understand the full impact of education investments. Much research has been done into some of the ways in which education leads to changes in the lives of people, but knowing which of these outcomes would be experienced by the stakeholders of a project would be difficult without involving them. This means that identification of the social impacts of an education project would ideally be a stakeholder-led process, with third-party research being used to supplement this. Using a tool such as myGVE can assist in mapping the outcomes experienced by your stakeholders and the way in which these outcomes are achieved.

Understanding relative values of outcomes experienced is a useful tool when decision-making (e.g. would more value be generated if a project was re-designed or delivered to a different stakeholder group who experience different outcomes?), and several different methods of valuation can be used to do this. Which valuation techniques you use will depend largely on the level of rigour you think is appropriate, and the quality of data you would feel comfortable basing decisions on. Ultimately, the process of social outcome valuation should reveal relative importance of outcomes and be a tool for you to enhance the value generated with the resources available.

5. Conclusion

Research into the benefits of education has predominately focused on the increase in individual earnings resulting from additional years of education experienced, or additional qualifications achieved. Evidence from the World Bank based on Mincerian models of analysis suggests that on average, each additional year of education results in an increase in individual earnings of 9.7%, although this varies depending on gender (females tend to receive a slightly higher uplift in earnings for a per additional year of education) and region (individuals in higher income regions generally show a lower uplift per additional year of education). A generally positive income enhancement is observed in individuals who achieve additional qualifications (varying from 71.2% to -10.3% and 58.1% to -10.2% for men and women respectively), although this is variable based on the type of qualification achieved, gender and, importantly, adjustments made to account for different data biases.

A wide range of social outcomes have been shown to result from education, including cognitive development, confidence, interpersonal trust and life satisfaction. Generally, these social outcomes do not have a financial value assigned to them, meaning that it is difficult to demonstrate their value in relation to economic outcomes. To address this, studies have used willingness to pay and wellbeing valuation to value social outcomes. Using the wellbeing valuation method, the wellbeing increase associated with vocational training for an individual living in London has been valued at £1,798.18 per year, and using the willingness to pay method, the value of a course improving life satisfaction has been valued at £947.

Although the link between education and positive economic and social outcomes for both society and the individual is well-established, the extent to which this is true for a given project is subject to many variables. This may include the type of education provided (e.g. vocational versus academic), quality of teaching, the local economic climate or the characteristics of your particular stakeholder group (e.g. male versus female, short-term unemployed versus long-term unemployed). Because of this, applying the results of third-party research to estimate the impact of a given project presents a challenge.

Understanding the impact of a given project will therefore require stakeholder involvement in determining both the social and economic outcomes which are experienced, and the extent to which these are experienced. This information will then inform which sources of third-party research would be appropriate to use.