Funding education – public and private systems

In this chapter we will:

• introduce the key principles used in evaluating the allocation and use of resources: adequacy, effectiveness, efficiency, value for money, transparency and equity
• consider the impact of globalization and governmental response to major environmental issues such as health (SARS, Ebola, Coronavirus) and the behaviour of international and national financial markets
• consider the efficiency and equity arguments for public and private funding, and the public and private provision of education
• distinguish between the private and public benefits of education
• outline the sources of funding for education and the institutions engaged in the provision of education: the public–private split.

A fundamental principle of funding is that resources are scarce; therefore there is always a finite amount of funding for education. This consideration should underpin all decision-making. If finance was not limited, the constraints within which education processes evolve would be very different, leading to the employment of as many teachers as necessary for maximizing learning, as many textbooks and as much science equipment and technology as teachers felt were required and as much
support as was thought to produce the best outcomes. But the reality is that resources are limited: as desirable as any educational objective might be, it can only be secured if funding is available. This is not only the case from central or local sources but also from public and private sources. Judging the potential best use of these resources requires an understanding of certain economic terms.

**Key principles**

It is necessary to have some criteria by which the use of resources can be judged. These are concerned with the way in which resource use affects outputs and outcomes.

**Adequacy**

Adequacy means that the level of resourcing is sufficient to meet defined educational standards or objectives at national, district and local levels. The concept of adequacy has been well tested in US courts since US education policy is made through cases that challenge whether particular practices are constitutional. Many cases have been mounted on the basis that particular states’ funding of education for particular districts or students was not adequate. Working out an adequate level of resourcing is not straightforward and there are a number of approaches. A simple method, and one now abandoned in US courts, is to compare education expenditure per student with an average, for example, the average over state school districts. As Odden and Picus (1992: 72) note, US courts have changed the assessment of adequacy in terms of the resources needed to enable educational programmes that provide for a minimum high standard of education for most students. This involves defining learning objectives, setting a curriculum and testing standards reached and then costing the resources for providing the curriculum. This approach can be further refined by estimating the resource levels that are required by students with different learning needs. Baker and Levin (2014: 29) note:

Modern conceptions of equal educational opportunity and educational adequacy shift emphasis away from schooling inputs and onto schooling outcomes and more specifically equal opportunity to achieve some level of educational outcomes.
This approach to adequacy means assessing the amount of compensatory finance that is needed to bring disadvantaged students up to defined minimum standards.

Policy makers have tried to define adequate spending level in three major ways:

- identifying a set of required inputs and pricing them
- linking spending per pupil to a level of student outcomes, by identifying districts that produce the desired outcomes, selecting average-performing students, then calculating average spending per pupil
- building a total amount from the bottom up by identifying the cost of each school-wide programme that produces desired outcomes

The adequacy of the level of national spending on education can be judged roughly by making international comparisons. Data from Education at a Glance, the annual digest of statistics provided by the Organisation for Economic and Cultural Development (OECD), show an enormous variation in education expenditure per student. In 2014 Switzerland and the United States spent an average of $14,000 per student per year, much of Europe spent near to the OECD median of $8,500 per student per year and, at the lower end of the expenditure range, the Russian Federation, Brazil and Turkey spent less than $2,500 per student per year. In part these differences reflect differences in GDP per capita: poorer countries spend less per student on teacher salaries because salaries are generally lower for all occupations; nevertheless an equivalent number of teachers are being mobilized for a much lower cost than in developed countries. Differences are also due to the greater numbers of students in the high-spending countries in tertiary (university) education, which is more expensive than general education. We must stress that:

Lower unit expenditure does not necessarily lead to lower achievement and it would be misleading to equate lower unit expenditure generally with lower quality of educational services. For example, the cumulative expenditure per student between primary and secondary education of Korea and the Netherlands are below the OECD average and yet both were among the best-performing countries in the PISA 2003 survey. (OECD, 2006: 171)
A more meaningful statistic for comparing the resources countries allocate to education is education spending as a percentage of GDP. The proportion of national resources devoted to education is determined in part by national policy, and in part by the priority given to education relative to other areas of the public and private sectors:

The amount of national resources devoted to education depends on a number of interrelated factors of supply and demand, such as the demographic structure of the population, enrolment rates, income per capita, national levels of teachers’ salaries, and the organisation and delivery of instruction. The size of the school-age population in a particular country shapes the potential demand for initial education and training. The larger the number of young people, the greater the potential demand for educational services. Among OECD countries of comparable national income, a country with a relatively large youth population will have to spend a higher percentage of its GDP on education so that each young person in that country has the opportunity to receive the same quantity of education as young people in other OECD countries. Conversely, if the youth population is relatively small, the same country will be required to spend less of its wealth on education in order to achieve similar results. (OECD, 2006: 203)

This explains why, although Denmark and New Zealand spend a comparable 7 per cent of their GDP on education, the provision yields more educational resources per student in Denmark where there is a lower proportion of 5–29-year-olds passing through the educational system. Differences in the age profile of populations are removed if we compare education spending per student per year as a percentage of GDP per capita. The OECD average for primary education in 2013 was 23 per cent, ranging from 29 per cent in Italy to 15 per cent in Turkey and the Czech Republic (OECD, 2018).

But it is not only national policy that determines resourcing for education. There can be variations at local level, for example, where the national per capita allocation or a devolved global sum is supplemented to meet local socio-economic conditions either from national or local funding. This is markedly so in the USA where local taxation related to property values puts some areas at a great advantage. It is also a feature of East African countries where there is a heavy dependence on local funding and so a variation in standards between urban and rural areas.
In poor countries that place an emphasis on basic literacy and numeracy but have low wage levels for teaching staff and minimal building provision, the amount of money deemed adequate to fund a school of 100 pupils will be very low by contrast with the apparent needs of countries where the concept of basic education extends to secondary or even to higher education. The answer to the adequacy conundrum is political, and governments need to be persuaded of the benefits accruing from education in order to make more public resources available.

Effectiveness

This refers to the extent to which an organization is judged to meet its objectives, regardless of cost. Effectiveness is a concept used for non-profit organizations that, by definition, cannot be judged on profitability. It is a concept that endeavours to bring together both the measurable and the more subjective elements of education hinted at in the previous section. It is the relationship between a school’s objectives and its outputs, but both of these are difficult to quantify – and yet a ‘hunch’ about whether a school is effective or not in relation to its objectives may be an important reflection of the way in which it is using its resources. It is a concept that embraces an implicit (if not always explicit) assumption that the objectives set for public sector schools reflect the social value of the outputs and outcomes produced by schools. A standard definition of effectiveness evolved by the UK Audit Commission is: ‘how well a programme or activity is achieving its established goals or other intended effects’ (1984: 3). With this in mind, a school or college is effective if it meets its objectives fully, but is ‘high cost’ if it uses its resources wastefully. This could be the case for effective schools with small classes.

Efficiency

Efficiency is the relationship between an institution’s inputs and its outputs. Efficiency entails securing minimum inputs for a given quality and quantity of education provided. This is achieved when a given quantity of output is produced at minimum cost. Defining and measuring the outputs of schools and colleges is problematic. For one thing, schools are multi-product enterprises – students learn a great variety of social skills and attitudes as well as specific cognitive knowledge and skills. Cognitive attainment, as measured in tests, exams and qualifications, is the most frequently used measure of output, but it only captures a part of a school’s output.
As noted in Chapter 1, the term ‘output’ is usually restricted to the immediate measurable effects of school or university, for example, in terms of exam results. ‘Outcomes’ of schooling are longer term and include employability, earning capacity and non-monetary benefits of education such as better health, better informed decision-making and enjoyment of cultural activities.

Efficiency as the relationship between inputs and outputs (or outcomes) can be illustrated by a simple example. Two schools have 70 per cent of their leavers achieving a certain level of basic literacy, but School A spends less per pupil than School B. Provided that the students in the two schools have the same distribution of prior attainment scores when entering the school, we can conclude that A is more efficient.

This concept is further refined by distinguishing between technical efficiency, which is the relationship between physical units of the inputs and the outputs (i.e. classrooms, teaching ratios, textbooks and so on), and productive efficiency, which is the minimum cost method of production. Technical efficiency is the relationship between the combinations of different inputs used and the resulting quantity of output. This can be seen in education where the inputs of teaching and materials of instruction are used in different combinations to produce a given number of pupils attaining a specified examination level. Several methods are assumed to be available – some more teacher-intensive, others making greater use of texts and technology. For each method, it can be assumed that the different combinations of teacher hours and equipment produce the same output. If it is not possible to produce the same amount of output with less of one input without increasing the amount of another input, then that combination of inputs is technically efficient. There can be lots of technically efficient combinations of inputs.

However, productive efficiency requires using the cheapest combination of inputs, which depends on the relative prices of the inputs. The technically efficient combination of teachers and equipment, given prevailing input prices, that produces an output most cheaply is known as the cost-efficient (or price-efficient) combination. Thus, if teachers become more expensive compared to computers, then it is cost-efficient to use more computers and fewer teachers, provided that output (i.e. student learning) does not decline. Recent research posits other types of efficiency noting dynamic efficiency, when advantage is taken of innovation; and social efficiency when the resources and outputs are valued in terms of societal gain.

Educational productivity is related to the concept of efficiency, but measures the amounts of inputs used to achieve the outputs. Given
the amount of other resources teachers work with, then the greater the output per teacher, the lower the cost per unit of output (given constant salaries) – in short, the bigger the class, the lower the unit cost. Technical progress is important in the economy generally as it is the main means of raising productivity. Better methods of teaching can raise teacher productivity. New technologies (computer-assisted learning and e-learning) are proffered as potential ways of raising productivity in education, but have yet to prove themselves. Miller and Glover (2006) have shown that, while it is possible to evaluate new technology in the classroom qualitatively, it is difficult to identify this so-called dynamic efficiency and measure the contribution that it actually makes to learning.

Productivity is a complex issue in education. For instance, some teachers are regarded as more productive than others, although this is difficult to measure reliably. The quality of Teacher A may differ from Teacher B and yet their cost per hour is the same; a set of texts used by Teacher C may be less efficient than when they are used by Teacher D, and so on. Pupil and student inputs may be comparable where basic intelligence or reading age is measured, but there can be little measurement of personality factors, attitude or behavioural traits. Levačić (1997) comments:

The problem facing teachers and school managers in making resource decisions, especially those concerning the most efficient and productive mix of learning resources and educational activities, is the absence of a well specified technical knowledge base which gives a blueprint of efficient methods. (135)

The definition of efficiency used so far has been the internal efficiency of educational organizations. Internal efficiency takes the social value of output as given (for example, basic literacy) and is only concerned with minimizing the cost of this output. External efficiency refers to the value society places on the outputs produced by productive units, such as firms, schools, hospitals, etc. By contrast, internal efficiency is limited to producing a given output at minimum cost.

The issue of whether the outputs of schools or universities are of value to society is a separate one. Colleges could be very efficient at producing pastry cooks, for example, when society does not value these skills because nobody wants to eat cakes. Firms operating in competitive markets in the private sector have a direct signal of whether society values what they produce – their level of profits. Public sector institutions do not have such signals and so need criteria other than profitability to
judge the value of their outputs. An important method of valuing output not produced for sale on markets is the political process – people vote for public policies and expenditure on public sector funded goods and services. There are also economic techniques for valuing non-market output, such as cost–benefit analysis.

Value for money

If an activity or an organization is both efficient and effective, it is said to be providing value for money. This concept attempts to bring the measurable and the immeasurable, the objective and the subjective together. Glyn attempts to define value for money as ‘a situation where those who strive to provide the service do the best they can with the resources that are available’ (1987: 12). Interpretations of ‘best they can’ will vary according to the views of the observers. Value for money is used in two ways. One has already been defined: the outputs compared to the inputs judged in terms of effectiveness and efficiency. The second definition is more limited, being restricted to the requirement that the resource managers attain the best-value purchases (for example, by having several competitive price quotations) and that they subsequently evaluate what they have purchased against the needs of the organization.

Kremer et al. (1997) looked at these issues in the development of education in Kenya. In their work, the authors were concerned to establish the practicalities of changing the balance of teachers and other elements in education. They analysed both resource provision and resource use. They concluded that while schools had been encouraged to recruit to, and beyond, physical capacity, and while greater rolls mean a greater income entitlement, there was no positive link to quality because of the great variation in the quality of headship, financial and resource management, and the community’s capacity to raise additional funds. In their view, external assistance is best offered to parents in a poor area rather than to the school itself, as then parents, as consumers, can determine where the money is spent. This, they argue, helps good schools to grow rather than simply putting additional funds into schools in poor areas, which are likely to be of poor or indifferent quality. Mestry and Ndhlovu (2014: 5) also show the importance of effective training for internal stakeholders on school governing boards in South Africa, where many:

lack the necessary financial skills to develop practical budgets and procure physical resources economically for their schools. They are
unable to set-up systematic structures and stringent processes, and this has caused wasteful expenditure for schools, and the failure of teachers to maintain and productively use physical resources. Their function to constantly monitor and evaluate the procurement and maintenance of physical resources is seriously lacking.

Over the last 20 years, it has been argued that both internal and external efficiency and value for money in the public sector have improved as a result of the introduction of some element of market forces. There has been an increasing and worldwide movement towards some degree of self-government for schools in the past 30 years. Within nationally prescribed frameworks and the retention of some central control through setting and monitoring standards, individual schools or colleges have been allowed to function without detailed central control, particularly over inputs. This has led to the development of quasi-markets, for example, by allowing parents freedom of choice in selecting schools. It has increased the degree of competition between schools in attracting students and is accompanied by funding schools largely in terms of the number of pupils they enrol.

Value for money is linked to the practices of New Public Management by which the principles of decentralization, stakeholder involvement and public accountability determine assessment of educational outputs. Following work in the Balkans, Štrangfeldová et al. (2019) offer the link as transitions from policy to management based on economic cost–benefit analysis, from the pyramid organizational structure to staffing, from classical planning to strategic activities, from process-oriented management to results-oriented management, from uniform public service delivery to its individualization, from property ownership to asset management, and what is the most important, pressure to reduce costs while preserving the quality and possible quantity of outputs – ‘Value for Money’ (2019: 51).

Transparency

We have already stressed that education is affected by political pressures. There is a need for all those involved in making the decisions that determine funding to be given the necessary information to enable them to make sound judgements that can be shown to be so. This requires the system to be transparent, which depends on how much information is available in the public domain. When decisions are made at the local level and within schools and colleges, the public needs to know how devolved
funds have been allocated, whether they have been properly spent and to what extent the resources have met the objectives set by or for schools. The need for transparency is recognized in various ways, with national allocation and reporting systems being available in the public domain. This has the combined effect of encouraging democratic involvement and lessening the opportunities for corrupt practice and siphoning off of funds. Transparency is a necessary feature of accountability. Without it, the framework and the impact of reporting to funding authorities, be it at local or national levels, will be inhibited.

Equity

One of the foremost concerns of the public in any area is that they are being treated fairly by their local area, their national government and the world at large. This is not the same as ‘adequacy’ although it may be affected by that as shown by Odden (2003). An example of differences in resourcing is the enormous variation in resources to support information and communications technology (ICT) learning. The percentage of headteachers reporting a serious lack of ICT equipment ranged from 2 per cent in Iceland to 5 per cent in Finland, 27 per cent in Greece, and 45 per cent in Turkey (OECD, 2006). It is clear, however, (Gerick et al., 2017) that at school and college level use of similar per capita funding varies and the achievement of equity at institutional level may depend on relationship to the internal and national infrastructure, professional development and curricular change. The history of the twenty-first century has shown how, in a global economy, the impact of events in one country can affect the financial capacity of other countries to fulfil any plans. The sub-prime collapse in the USA in 2008, the protracted civil war in Syria and associated terrorist activities, and recurrent epidemics and pandemics (SARS, Ebola, Coronavirus) caused the collapse of world trade and the consequent diversion of funds from education to other needs. The varying national responses reflect political pressures and priorities and may do so for many years to come.

The annual OECD comparative figures reflect the varying ability of countries to generate national income as well as differing policy decisions on what percentage of national finance should be available to schools. While such differences across national boundaries can be understood, there is much greater parent and student unhappiness about variations in the level of funding to schools and colleges in different areas within a country. This leads us to think further about equity in the allocation of resources to different institutions and other units, and then to students,
subjects or other curricular programmes. What distribution is judged fair is a highly subjective matter. Most equity judgements involve a great deal of thought about the social ends of education as interpreted within the context of a school or college. Equity is a complex concept and has several distinct interpretations. One distinction is between equality of opportunity (people are able to make the same choices) and equality (people have the same amount of an item, such as income or education).

Another important distinction is between horizontal and vertical equity. Applied to education, horizontal equity is the criterion that students with similar needs should receive the same amount of resources. Vertical equity is the criterion that students with greater learning needs should receive more resources – though how much more is a difficult issue to resolve. ‘Fairness’ judgements can be based on comparisons of unit costs – how much is the school spending per pupil on teaching mathematics to pupils at different levels, for example – but most equity judgements do involve a great deal of thought about the social ends of education as interpreted within the context of a school or college. For example, should examination-level classes be smaller than those where basic education is being taught; should pupils in a socially advantaged area have the same level of state support as those who are less favoured, and should schools be allowed to maintain small classes for university entrance qualifications when these lead to an uneconomic use of teaching resources and are thus a drain on local funding?

Important equity issues arise when some areas in a country are wealthier and can raise more tax to fund education than poorer areas. By contrast, poorer areas often have greater need for funding of education because of lack of parental support. This problem is tackled by a redistribution of tax revenues from richer and less needy areas to the poorer and more needy. This is known as fiscal equalization. Benson and Marks (2005) see this as ‘Robin Hood’ funding, but note that even where redistribution does occur, the favoured areas often face overall lower costs than those needing assistance. An example of this would be where the socio-economic climate of the favoured areas results in lower crime rates and consequent lower building-security costs. This has been the source of much litigation within the USA where funding has been challenged as inadequate for national educational objectives (examples are listed by Hunter, 2018).

Some attempt at financial equalization is practised in almost all European countries, often by supplements to the basic per capita formula for financial allocation. However, in many developing countries, such as China, central government does not have sufficient tax-raising powers
to undertake this and so they have introduced other support measures. In China basic education is funded at provincial, county and community level (and so is very much affected by local income levels) but may also be supported by the income generated from local school-based enterprises. With such complex funding, it is difficult to promote equity. However, with rising prosperity and improved tax collection, a country like China has improved the situation.

The extent to which resource allocation is centralized can also affect equity issues. Where central allocation systems operate, it is easier to use funding mechanisms aimed at overcoming deprivation, for example, through allocating additional funding to socially deprived areas or providing particular enhancement programmes aimed at meeting national objectives. If the allocation is decentralized, the authority to which it has been delegated could have other priorities and, if the overall delegated scheme is not prescriptive, it could, for example, maintain a per capita funding that does not address social needs. The development of quasi-markets may encourage schools to recruit more able students and avoid recruiting those from socially deprived backgrounds, thereby inhibiting equity (as outlined in recent developments in Japan in Chapter 1).

The private and public benefits of education

‘Individuals and countries that invest in education and skills benefit economically and socially from that choice’ (OECD, 2006: 15). Human capital is a major factor driving economic growth, both in the world’s most advanced economies and in those experiencing rapid development. Not least, it contributes tangibly to social outcomes, including health and social cohesion.

In the eighteenth century Adam Smith recognized that education is an investment in human capital analogous to that of physical capital in the world of industry. Educational literature refers to economic capital as the present value of a flow of anticipated income. Present value means the value today of money received at specified future dates. The further away a given future sum of money is, the lower its present value. Present values also depend on interest rates, since the alternative to receiving £100 in the future – say in 10 years’ time – is to receive a lower sum of money today which, when invested at the current rate of interest, equals £100 in 10 years’ time. Clearly the higher the interest rate, the lower the present value of £100. Cultural capital and social capital are different
from human capital. Cultural capital, like human capital, is the property of individuals and exists as long-lasting dispositions of the mind related to having the knowledge and skills to succeed in social relations. Social capital is the property of groups and is the aggregate of potential benefits arising from group membership. The interrelationship between these three is varied and complex but the notion of ‘conversion’ by which an activity in one area, for example, culture, affects outcomes in another, for example, economics, is fundamental to our understanding of the values and process of education. This understanding is affected by considering the ways in which education can be seen as a private (i.e. personal), or a public (i.e. collective) good.

Educational outputs and outcomes thus affect private and public well-being. Some would argue that education has value for its own sake and that the acquisition of knowledge and the development of skills and attitudes is important for the gain it can bring to individual development. While this is certainly true, it is the collective demand for education that determines public willingness to accede to national taxation systems to support it. It is public outputs and public outcomes that are used to justify the redirection of a proportion of the gross domestic product towards education. However, while the concepts can be understood, their measurement is difficult, particularly in countries with limited data, as shown below in the analysis of the returns to education in Honduras. By this we mean the gains in income for individuals and in aggregate for the country as a result of the investment in schools and colleges.

Bedi and Edwards (2002) attempted to see how the quality of schooling contributed to earnings as a measure of educational outcomes in a study in Honduras. Their analysis demonstrates the difficulty of measurement in educational assessment because not all gains can be quantified, for example, espousal of democratic processes. Their aims were to see how far the quality of education resulted in higher earnings and, if this was the case, to investigate the role of education in securing a better distribution of earnings and, hence, opportunity. By identifying a number of factors that might affect educational outcomes, such as family background, teacher training profiles and school characteristics (availability of water and electricity), and then using regression analysis (a statistical process that establishes the effect of one factor on all the others), they were able to substantiate their hypothesis that educational quality and future earning are related.

For them, as for countless other commentators, education does make a difference. The outcomes and outputs are significant at a personal, local and national level. However, it is important to recognize that such
exercises are generalizations – the authors point out that they were measuring the earnings of people in the current educational context, although the better method would have been to compare earnings now with the quality of education at the time when the cohort was at school! They also admitted that they were taking data of average earnings within a municipality as the basis of comparison when it would have been more accurate to relate earnings to the actual schools that individuals had attended. That said, their work is an example of how data on educational outcomes can be related to schooling.

At one level the outcomes of education are the personal gains. Student willingness to embark on higher education is determined in part by the personal advantages that are likely to accrue from participation. In reporting on research into graduate employability in a technical university in England, Glover et al. (2002) note that 58 per cent of students were attracted to higher education because of its anticipated effects on their earning capacity. The private rate of return to education is considered as the average percentage increase in earnings gained by a student moving from one level of education to the next higher level. Variations are shown: for example, those moving from secondary to tertiary in Brazil and Costa Rica secure an increase of over 40 per cent in their earnings, while the average for OECD countries is 22 per cent, and for those countries where there is a very high tertiary education take-up, the gain is much less – New Zealand at 14 per cent and Sweden averaging 10 per cent gain (OECD, 2018: 91).

While these variations may be the result of differing labour market conditions, they still constitute a private inducement to proceed to higher levels of education. There are gains at all educational levels. These include direct gains through basic literacy, numeracy and other knowledge visible from pre-school to higher education and measurable by test results and academic achievement. Personal gains include those wider skills that enable the individual to function in society. These also include the so-called ‘key skills’ of teamwork, problem-solving, communication and, increasingly, the use of technology. At a higher level the gains are in social interaction, moral development and creative capacity. At a local level these contribute to the availability of a skilled, or at least trainable, potential workforce; at a national level they ensure that the needs of national policy development can be met. Education not only increases the private earnings of individuals, it also increases national output over and above its effects on individuals’ earnings. This is because a more highly educated and skilled labour force adapts to technical change more quickly, thus raising the speed at which innovations are
diffused through the economy and thereby raising productivity and growth of GDP.

It is noteworthy that rising tertiary education levels among citizens seem generally not to have led to an ‘inflation’ of the labour-market value of qualifications: among the countries with the largest expansion of tertiary education, in which the proportion of 25 to 64-year-olds with tertiary qualifications has increased by more than five percentage points since 1995 – Australia, Austria, Belgium, Canada, Denmark, Finland, Iceland, Ireland, Japan, Korea, Mexico, Poland, Spain, Sweden, Switzerland and the USA – most have seen stable or rising earnings benefits among tertiary graduates. This suggests that ‘an increase in knowledge workers does not necessarily lead to a decrease in their pay in the way it does for low-skilled workers’ (OECD, 2006: 23). However, statistics for 2016 show that while tertiary education leads to an average 85 per cent employment rate, national circumstances are such that only 71 per cent are employed in Greece, but 89 per cent are employed in Norway and Sweden (OECD, 2006: 89).

While the increase in pre-tax lifetime earnings due to obtaining a degree is greater than the cost for most English domiciled graduates, for some the costs are not compensated for by higher earnings (Britton et al., 2020). This study, which was able to use the Longitudinal Education Outcomes data set that tracks students through school, university and the labour market, finds substantial differences in lifetime returns on a degree by subject and for attending more selective universities – especially for men. Fifteen percent of women and 25 per cent of men experience negative earnings returns from a degree – arts subjects tend to offer negative returns, while economics, law and medicine provide the highest returns. Earnings returns do not include the potential social benefits of higher education, which are more difficult to measure.

So, while investment in education may occur, it does not automatically raise earnings and national economic growth rates. These will not occur if the quality of education is poor or if there is insufficient growth in the capital stock to absorb the additional more highly educated individuals or if they have studied areas that do not equip them for available jobs. In some countries graduate unemployment is a problem. Other contextual factors can inhibit the beneficial effects of education. For example, Ntshoe (2003) detailed this with evidence drawn from South Africa, where ineffective governance and management and the ever-present problem of HIV/AIDS inhibit both outputs at an individual level and outcomes in general terms.
The educational economist Eric Hanushek has investigated the link between the development of human capital and personal and national income growth. His research shows that it is not the number of years of schooling (or quantity of education) but the nature of teaching and learning (or quality of education) that has the greatest effect on employment and earnings potential. This investigation involved relating estimates of countries’ cognitive attainment (based on international comparative tests since the mid-1960s with economic growth). He argues that, ‘there is mounting evidence that quality measured by test scores is directly related to individual earnings, productivity, and economic growth’ (Hanushek, 2006: 449). He contends that the quality of work-related training schemes must be very high if they are to offer equivalent cognitive development to good-quality schooling, and that all reform requires enhanced teaching quality. These issues of curriculum content, process and teaching ability are fundamental to optimum resource use.

Funding education – public and private systems

The central issue for educational finance is what should be the respective roles of the public and private sectors in education. The relative importance of the two sectors varies between countries for political and historical reasons.

There are two main reasons for the state needing to contribute to financing education. The first is equity, so as to ensure that children’s educational opportunities are not determined by the income and preferences of their parents or guardians. The other is for reasons of efficiency, which arise from the fact that education has external benefits for society as a whole as well as private benefits to the individual. Examples of the external benefits of education are a more productive workforce that enhances the rate of economic growth, social cohesion, better health and parenting, and better informed public decision-making through democratic political processes. If the external benefits of education are available to everyone regardless of whether they pay for them, there is no incentive for private individuals to finance public benefits. If this is so, the private education ‘market’ will not produce as much of the good in question as society (or part of that society) would wish to have available. Therefore a collective decision must be made to raise taxes and purchase the good through the state.

However, the state can ensure that more education is produced by financing it, for example, by paying for children to go to school: it does
not need to enter production and be a provider as well. The distinction between the state financing education and actually providing it (i.e. producing it) is an important one. An important and controversial issue is whether state educational organizations are as internally efficient as private sector ones. Some argue that production units (for example, schools) are less efficient in the public sector than in the private sector because the former are protected from competition. Because of this, managers, teachers and lecturers have no incentives to work efficiently because they have secure public sector jobs and their salaries are paid regardless of performance. These arguments have underpinned recent educational policies in many countries. These include ‘privatization’ or a greater reliance on private sector profit- and non-profit-making organizations that provide supplements to basic education that is still funded by the state.

In many developing countries the state cannot raise sufficient tax revenues to provide universal free basic education. A further problem in state schools is severe inefficiency due to poorly paid teachers being absent in order to work on their own farms or at other jobs. In such cases the private sector may be able to enter the market and supply cheap, though fee-paying, education for the poor. An example is Kenya, where some public funding is put into establishing schools through community enterprise but where parents are expected to pay fees for the running costs of the establishment. A very small proportion of local taxation is thus used for education, but, in reality, parents meet a considerable proportion of student costs. In other countries, such as China, the schools have become entrepreneurial in raising funds by providing agricultural, industrial or technological services. Even in developed countries schools appear to need to raise additional funds either through parental donations or by hiring out school facilities when they are not otherwise in use. New Zealand schools are encouraged to recruit overseas pupils who live with local families and bring with them both enhanced pupil fees and a boost to local income.

The World Bank has advocated that parents pay fees in both state and private schools in developing countries in order to increase the number of places. While such policies probably increase efficiency by expanding educational provision, the downside is increased inequity as poor parents are less likely to send their children to school. By contrast, most educational provision in Eastern Europe is funded through disbursement at local level from a direct grant to the area from central government, and few parents would expect to pay for any element of their children’s basic education.
There is a much weaker argument for free provision of higher education than there is for free provision of basic education. The argument is that the return to higher education is mainly private, not public, and therefore the individual should pay most of the costs. Furthermore, if higher education is subsidized, the people who benefit are middle-class households, whose children have a much greater participation rate in higher education than children from poorer households, and future graduates who earn higher than average incomes. Yet the people who pay taxes include large numbers on average or below-average incomes. A subsidy to higher education is therefore regressive as money flows from the less-well-off to the better-off. This is the essence of the case for students paying fees for higher education and taking out student loans to pay for fees and living costs while in full-time education (Barr and Crawford, 2005).

The sources of funding for education

Releasing public resources for education usually requires public recognition of likely gains of spending on education rather than from expenditure on other public services. This leads to key policy questions about priorities between education and other public services as well as about priorities between the different levels of education. At the national and local level, depending upon the governmental framework, there are different demands for public revenues leading to competition between support for schools or, for example, social housing or for support of the elderly. At the institutional level, there is very rarely sufficient funding for intended plans, and so scarce resources have to be allocated in the most efficient and effective way possible. In most countries, the public sector is not the only provider. However limited their incomes, families have the opportunity to use private income and wealth for their own ends. If people believe that public education provision is limited, they can support it by supplementary funding of public schools or by supporting entirely private institutions. Policy questions arise from differing views on the desirable balance between private and public funding and the ways in which overall provision can be secured.

Public expenditure on education (or any other service) is financed mainly through taxation. This may come entirely from central government using revenues from a centralized tax collection system, or from local funding, usually by a local rate precept, or by a combination of the two systems. Other sources are revenues earned by the sale of goods,
services or assets by public sector organizations, as in the sale of expert services by university departments and borrowing by the public sector, usually for buildings and other capital projects, although ultimately this has to be paid for via taxation or state revenues.

There is very great variation in the way in which national systems, and even local arrangements, resource education. There will be a combination of funding from basic sources, generally from central government, local government, the community and fee payments, supported by central and government special bidding, parental support and sponsorship of various types.

For the private sector, the most common source of revenue is that of fee payments, with some very limited additional support from donations and public sources. Many such private schools, colleges and universities in the historically developed world are supported by large endowments that have accrued over the years and which have been more or less skilfully invested to yield current income. They may also be aided by charitable foundations and, in some instances, by services rendered, for example, during school vacations.

Public and private provision and efficiency and equity in resource use

Efficient use of public funding requires that the agencies to whom funding is delegated, be it a district that then allocates funds to schools, or the school or college receiving funds directly, yield both technical and productive efficiency. To assist this, leadership at district or institutional level has to recognize the ways in which national objectives can be attained and provide the necessary supervision to ensure results. The ‘immediacy of responsibility’ principle applies in that if local funds are being used, those responsible at local level are accountable to their community and will be more likely to be efficient than if their funding comes from distant central government to whom they are responsible by occasional supervision, inspection or audit. It could be argued that the combination of central and local funding that supports schools in many countries offers a combination of central supervision with local accountability.

Efficiency within the private sector is dependent upon the management at each institution. However, there are broader questions about the capability of the private sector to contribute to the national educational good in an efficient way if it is funded at a higher level beyond
basic provision and without the constraints of public sector institutions. Nationally, it may be asked whether the use of private investment in this way is efficient – how much greater would outputs and outcomes be if the public sector was supported at the same level?

In the public provision of education, equity is compromised where there is no universally consistent source of funding to meet varying socio-economic conditions. Equity issues also arise when it appears that privately funded provision offers a quality of education not available in the public sector.

**Conclusion**

This chapter has introduced the criteria by which resource allocation can be judged. It has considered the outputs and outcomes of education and shown how these are used in assessing the private and the public benefits accruing from education. The debate is whether public or private investment in education is more productive in given contexts. In brief, the advantage of central government funding is that of equity and also in ensuring greater national uniformity in standards when education is regarded as a national and not a local public good. As governments have been increasingly concerned with the importance of the education sector in producing a highly skilled labour force, so tolerance of differential standards has diminished. In order to compensate in those areas where deprivation in many forms inhibits educational outputs and outcomes, fiscal equalization has been increasingly used, either by supplementary central or local public funding, to enhance educational effectiveness. This suggests that many educational problems can be solved simply by a higher level of resourcing, but there is increasing evidence – as shown in the management data in Ofsted (Office for Standards in Education) reports in the United Kingdom – that without good resource allocation aimed at the fulfilment of stated educational objectives, spending more does not necessarily achieve a better educational output. Dolton *et al.* (2014: 47) propose an efficiency index considering which education systems deliver the best value for money, and they offer a classification that brings together organization and outcomes, as measured by the international PISA (Programme for International Student Assessment) tests. They suggest that national systems can fall into five groups:

- **Elite Performers** – highly efficient and with superior PISA scores
• **Efficient and Effective** – efficient but not securing the highest scores
• **More Effective than Efficient** – overspending or bloated
• **More Efficient than Effective** – underspending or underperforming
• **Inefficient and Ineffective** – needing to improve resource use.

Our following chapters demonstrate how improvement can be made through leadership awareness of resource management.