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chapter 5

RETHINKING HUMAN CAPITAL

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SUMMARY

Investment in human capital is now seen as central to the development of advanced economies and democratic societies. This chapter suggests that there is more to human capital than the more readily measurable – and very important – literacy, numeracy and workplace skills.

Educational attainment and readily measurable skills account for less than half of individual wage differences in OECD countries. Part of the remainder may be explained by a “wider” form of human capital, defined as the characteristics that allow a person to build, manage and deploy his or her skills. These include the ability and motivation to learn, effective job search skills, and personal characteristics that help one work well, as well as the capacity to blend a successful life with a good career.

Individuals need to learn how to manage their long-term goals, both job-related and social, as well as acquiring specific skills for finding work. The development of these characteristics – such as the ability to plan and think ahead – will depend not only on early experience at home, but also on the active role of schools and colleges in nurturing these abilities. Careers education and guidance can be central to this, and needs to support long-term learning strategies, and work with other influences, including those of family and peers.

The wider concept of human capital helps bridge the gap between those who emphasise education’s economic mission, and those who emphasise broader social and personal benefits. The chapter proposes policy directions for building wider human capital, and outlines a supporting research and evaluation agenda.

1. INTRODUCTION

The notion of human capital, and its place in policies for education systems and the economy, is under intensive debate. Human capital is increasingly seen as an engine of national economic growth and development. At the same time, the goal of education is to prepare for life as well as for work, and the economic role of education needs to be placed in the context of the development of “whole” individuals – not just their working skills. Issues of measurement and testing present a separate, but related challenge. While many measures of educational outcomes concern knowledge and skills, qualities like creativity and team-working skills are harder to test and measure, although they are receiving increasing attention both in the workplace and in non-working life. Moral and civic qualities – for example compassion, or the understanding of democratic institutions – are also important potential outcomes of education. In the face of these multiple demands, our understanding of human capital needs to develop and change.

This chapter sets out an approach designed to broaden the way we think about human capital and how it relates to systems of learning and production. Drawing on new and existing evidence, it suggests that, alongside skills that directly enhance productive capacity, a wider set of attributes play an important role in human capital. This “wider human capital” is defined as the capacity to develop, manage and deploy one’s own competencies, for example by investing in further learning, by finding a job that suits one’s talents and by developing facets of one’s character that enhance one’s effectiveness at work. The evidence so far available suggests that greater emphasis in educational policy making needs to be given to such attributes, since they play a key part in determining productivity, as well as affecting individual and social well-being.

This chapter may be set in the context of a wide range of other work which is beginning to illustrate the diverse elements which contribute to human capital. This diversity has been well illustrated by the outcome of the OECD exercise entitled “Definition and Selection of Competencies” in which a number of OECD countries collaborated to identify competencies for life (DeSeCo, 2001).

Other work has looked, for example, at the non-economic outcomes of education and training, at the role of motivational traits in the labour market, and at more complex intellectual capacities like creativity and problem-solving. One implication of the analysis presented here, alongside these new strands in the human capital literature, is that a better understanding of how a range of human attributes contribute to economic output leads to a better understanding of the wider social, personal and cultural benefits of education and training. The first part of this chapter – in Sections 2 and 3 – therefore explores human capital largely from the economic perspective of monetary returns. Later sections pursue the implications for the wider benefits of education and training.

The following analysis uses the OECD’s broad definition of human capital, as:

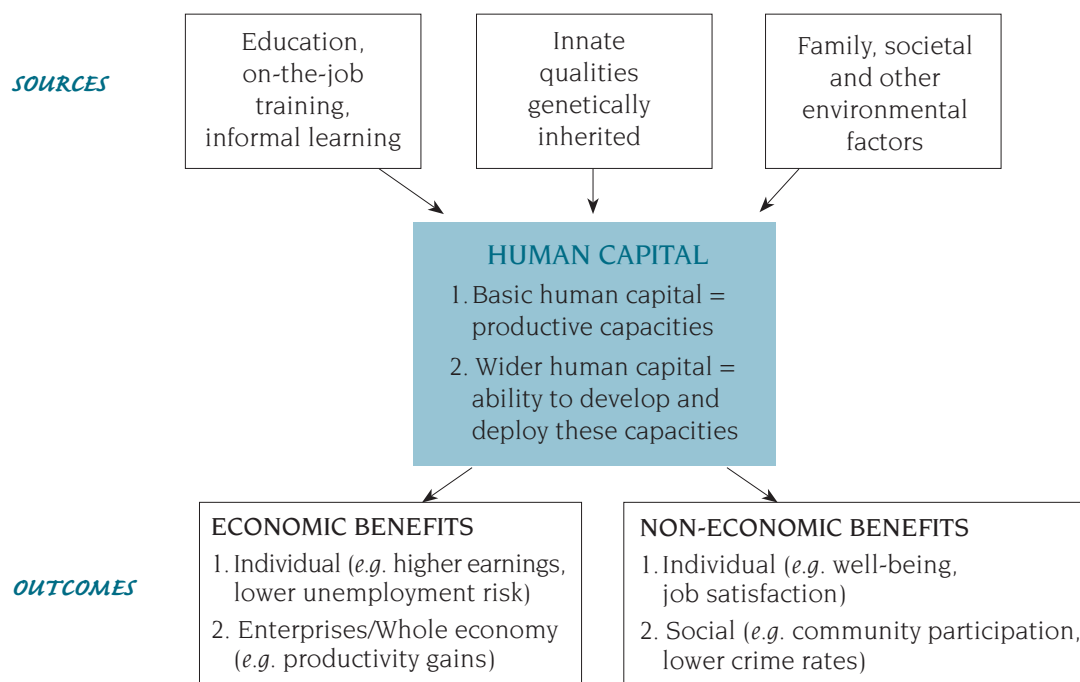
The knowledge, skills, competencies and attributes embodied in individuals that facilitate the creation of personal, social and economic well-being (OECD, 2001a).

As illustrated in Figure 5.1, these attributes are potentially derived not only from formal education and training, but also from a person’s background, experiences and innate qualities. They can have a bearing not only on individual wages and job prospects, but also on overall productivity, and on well-being. Just as different strands of human capital may have different origins, they may also have different kinds of impact. For example, the capacities necessary for a rewarding private life are unlikely to be identical to the interpersonal skills required in the work place, even though there may be a large overlap.

Policy makers need to improve their understanding of which forms of human capital derive from various influences and what are their different impacts. The part played by education compared to other influences and innate qualities, is of great significance. To what extent can education overcome disadvantages associated with a poor family background, and to which aspects of human capital can education make the greatest contribution?

This chapter makes a start, first of all by considering, in Section 2, how different forms of human capital may affect earnings. The evidence here

Figure 5.1 Human capital – sources, aspects and outcomes



indicates that the narrower forms of human capital that are more susceptible to measurement tell only part of the story. Section 3 therefore considers the role of wider forms of human capital – in particular, people’s ability to develop, manage and deploy their own skills – in relation to individual economic gain as well as to wider economic and social benefits. It suggests that, while some people help improve the operation of labour and skills markets by managing their human capital well, others lack the attributes that would lead them to invest in education and skills in the first place. Section 4 looks more specifically at the significance for education systems of the capacity to manage one’s own learning, for which a measure has been developed at the school level. Section 5 considers what can be done at the policy level to develop wider forms of human capital, in the context of the multiple sources of human capital shown at the top of the diagram in Figure 5.1. Section 6 concludes by pointing to some of the new priorities that this implies for education systems, and to how further research can improve our understanding of the way in which different forms of human capital are developed and applied.

2. HOW HUMAN CAPITAL AFFECTS EARNINGS: THE EVIDENCE

2.1 Cognitive skills and education as determinants of earnings

The International Adult Literacy Survey (IALS) tested the literacy and numeracy skills of adults in a number of countries in the mid-1990s and is the main internationally comparable source of data on earnings in relation to direct measures of cognitive skill (OECD, 2000). The survey also asked about other factors that can contribute to human capital and earnings, including educational background, work experience and social background.

About 40% of individual variation in earnings is explicable through IALS measures such as educational qualifications, literacy and work experience, combined with the background factors of gender, language and parents’ education levels. Around half the variation in earnings was explained for Canada, the United Kingdom and Chile, but only about a quarter for Finland and Poland. In most cases, education had more explanatory power

Box 5.1 Human capital and the determination of earnings in the labour market

Under the idealised circumstances of what economists call “perfect competition” wages are entirely determined by worker productivity at the margin. An employer will go on employing more workers until, through a process of diminishing returns, the extra output contributed by the last worker employed (productivity at the margin) falls until it is just equal to the cost of employing that worker.

The added value of an individual’s skill, and its reward, will also depend on whether that skill is in short supply. In another idealised market – this time in human capital investment – wage rewards from skills will tend to equate with the costs of acquiring those skills. This is because rewards over and above such costs will encourage more investment in that skill (through education and training). Such investment will increase the supply of that skill, which will in turn lower its wage reward until it is equal to the costs of acquiring the skill (removing the “extra” incentive for acquiring the skill).

The upshot, if both these markets were working perfectly, is that wages would be equivalent to productivity at the margin, and the wage benefits associated with particular skills would be equivalent to the cost of acquiring those skills. Moreover, in these perfect markets, people would reap no rewards from “wise” decisions about job choice or human capital investment, because true bargains, in the sense of choices which yield unusually large returns, do not exist in the long run. Others in the market recognise such opportunities, raising their price until they are no longer bargains.

In practice, neither market bears much resemblance to these idealised versions. First, a very large range of factors, other than productivity, affect wages. Wages vary by firm size, even within the same industry, with larger firms generally paying higher wages. Workers do not always manage to find the job which will make best use of their skills. Employer preferences, including discrimination, will bias wages. Even when employers do seek to match wages to productivity the match may be weak, because their measures of individual employee productivity may be poor, and institutional constraints on wage-bargaining mean that the scope for employers to match wages to individual human capital is generally limited. Wages will also reflect the relative attractiveness of different types of work to workers and variations in attitudes to risk. For example, those who place a high value on employment security may accept lower wages in return for a secure job (Raudenbusch and Kasim, 1998).

Modern labour economics also suggests that employers may often have incentives to pay “efficiency” wages (higher than labour productivity at the margin). Such wage levels reduce costly staff turnover and monitoring costs by giving staff an incentive to stay in jobs and not to risk the sack through shirking.

Human capital investment is also less neat than in the idealised model. The wage rewards for particular skills (like ICT skills) can be volatile, with long time lags before additional training can adjust the stock to meet demand. Risk again plays a part, since profitable but risky forms of human capital investment may be avoided by those who shun risk. Student ignorance of course contents and career outcomes sometimes leads to poor course choices, and choice is in any case constrained by institutional factors in educational systems. Many non-economic incentives also bear on course choice – for example, some courses are more enjoyable than others – increasing the supply of the skills acquired, and depressing the associated wage returns. For all these reasons, the wage rewards from a skill will not necessarily be commensurate with the cost of acquiring that skill, or the time taken to do so.

than literacy (Denny *et al.*, 2000; Boudard, 2001). Analysis of the survey results for the United States, Canada, the Netherlands, Sweden and Switzerland shows that length of education and literacy skills are closely associated, but that they each have a separate, roughly equal, effect (Blau and Kahn, 2001). US studies of earnings returns to education and measured cognitive skills suggest that the latter account for only about 20-25% of the contribution of years of education to wages (Bowles *et al.*, 2001*b*).

Overall, these findings suggest that earnings prospects are improved by:

- more years in education;
- skills that do not always come from more education, but from other sources; and
- an important set of factors that are not quantified by the measures set out above.

In these studies, the measure of education is limited, whilst those for cognitive skills are narrow. The usual measure of education – the number of years enrolled – takes no account of wide variations in the quality of provision. The cognitive skill measures are also typically based on literacy and numeracy skills measured in pencil-and-paper tests, which have limited power to assess aspects such as lateral thinking and creativity. Nor is there any direct measure of vocational skill – for example, knowledge of electric circuitry for an electrician.

Of the remaining 60% of variation in earnings which is unexplained by the available human capital measures in IALS, how much is due to other, unmeasured, human capital factors, and how much by other factors? Clearly not all earnings variation is due to human capital. People vary in the extent to which they trade off earnings against other job factors, such as job satisfaction and working hours, and measurement error and plain luck cause further variation. Moreover, the link between human capital and earnings is not straightforward. In the textbook world of perfectly operating markets, individual earnings would be determined entirely by each person's productive capacity and the level of individual investment in productive capacity. In practice, however, a number of complicating issues mean that many other factors are involved (see Box 5.1). Some of these factors – like discrimina-

tion on grounds of race and gender, or sudden, technology-induced changes in the demand for particular skills – are largely beyond the control of the individual wage earner. Others will not be. The relationship pictured in Figure 5.1 between human capital and its economic benefits is therefore far from simple.

2.2 Personal characteristics that influence earnings

Some recent studies suggest that part of the “missing” influence on earnings comes from motivation and other personal characteristics which are associated with higher average earnings (see Box 5.2). In a world of perfect information, the link between performance-enhancing personality traits and wages would be an indirect one: directly, employers would observe and reward the higher output of those with such traits. However, in practice, employers make recruitment decisions on the basis of limited information, may monitor individual productivity imperfectly and often face heavy costs if they decide to shed labour. This is one reason why employers place a direct value on attributes like trustworthiness, self-discipline or team-working capacity.

Other characteristics may also enhance earnings, without necessarily being attractive to employers. Entrepreneurial individuals may search out job opportunities where, at least temporarily, the supply of labour has not kept up with demand and extra earnings are therefore available (Bowles *et al.*, 2001*b*). An obvious corollary is the possibility of identifying and investing in a skill for which there is (temporarily) excess demand. These considerations suggest the need for a widening of the concept of human capital, along the lines developed in the following section.

3. A WIDER CONCEPTION OF HUMAN CAPITAL

3.1 Managing one's own productive capabilities

The evidence reviewed above shows that some personal characteristics that influence earnings are not related to direct productive abilities, but to people's dispositions and the way they behave. This observation may be linked to a more fundamental point. Human capital differs from physical capital in that people manage themselves whereas machines, as a rule, do not. People manage themselves by

Box 5.2 Personality and motivational characteristics, earnings and job performance

There is growing evidence from studies undertaken in the United States that many personality characteristics and motivational traits affect earnings. Much of the literature is reviewed in Bowles *et al.* (2001*b*). Direct evidence emerges from studies like those by Cawley *et al.* (2001) who show that socialisation skills acquired at school are related to earnings – these include “the self-discipline to follow the rules, to show up at school on time, and not to abuse drugs or alcohol”. Such skills help to drive later educational attainment and earnings. A study of a rather broader range of personality characteristics by Kuhn and Weinberger (2001) shows that leadership qualities, alongside sociability, self-confidence and other personality measures all have independent positive effects on earnings.

There is also evidence linking job performance to personal attributes. Pencil-and-paper personality tests are commonly used in personnel selection, testing for characteristics seen as desirable such as conscientiousness, openness to experience, extraversion, agreeableness, and undesirable characteristics such as neuroticism. The value of such tests depends on two assumptions: that such characteristics can be accurately determined through the tests and that they are relevant to subsequent job performance. Evaluations of the effectiveness of such tests in predicting subsequent job performance have tested the degree to which the two assumptions are jointly valid.

In these evaluations, job performance is commonly measured either through supervisor assessments or through outcomes such as promotions, wages and productivity. While individual results have been mixed, reviews of research in this field show positive results. One review shows that openness to experience, agreeableness and (negatively) neuroticism are particularly important. Unsurprisingly, personality tests are most effective at predicting performance when they are based on an analysis of the personality requirements in a particular job (Tett and Jackson, 1991).

Employers commonly cite personality and motivational traits as very important selection criteria in recruitment. A recent survey in the United States by the National Association of Colleges and Employers (NACE, 2000) found that employers’ five most highly-valued personal qualities, in order, were: communications skills; motivation/initiative; team-working skills; leadership skills; and academic achievement.

attempting to make the best use of their existing skills in the labour market, and by sustaining and developing those skills over time. Given turbulence, uncertainty and gaps in labour markets and in markets for human capital investment, individuals can increase their earnings by managing their own productive skills wisely. This could involve spotting a job where one’s skills would be best employed, or developing a skill that is in short supply.

Such “wider” forms of human capital facilitate efficient identification and acquisition of skills in short supply, and efficient use of existing skills. They therefore

do more than just give individual advantage; they contribute to overall economic output, and overall well-being, by putting the right people with the right skills in the right place in the economy.

A fuller conception of human capital could therefore comprise:

Basic human capital

– Productive capacities and characteristics (like carpentry skills, physical strength, creativity, communication ability). These can be thought of as “skills”, broadly defined.

Wider human capital

- Characteristics that allow a person to build, manage and deploy basic human capital.

These include:

- (i) The ability to acquire and develop skills. This includes the ability to learn, to identify one's learning needs and to manage one's learning activity.
- (ii) The ability to find the best place to utilise these skills. This includes career planning, job search skills, and the ability to blend working and personal objectives.
- (iii) Personal characteristics (like trustworthiness) which make people more attractive as employees, because they are more likely to deploy their skills productively. Motivational characteristics are likely to be central.

Some general skills and characteristics apply across these boundaries: general intelligence helps people to be good at particular jobs and to manage their own careers; self-discipline adds to productive capacity and supports learning skills. Other attributes and skills increase individual earnings but not output, and should not therefore be regarded as genuine human capital. Race and gender, under conditions of discrimination, fall into this category.

The range of competencies involved in wider human capital is not only relevant to choosing courses and finding jobs in the open market, but also to *internal* labour markets within enterprises – particularly in the case of large firms. Within organisations, individuals can advance their careers not only by proving themselves to be good at particular jobs, but also by actively learning on the job, and by securing the career moves and training which will advance their careers. Moreover, these competencies will also be attractive to employers since workers with these skills will play an active and creative part in the development of the organisation's skill base. This is particularly likely in enterprises subject to rapid innovation, where central planning of human capital requirements may be too inflexible. Employers may be willing to recognise and reward these competencies directly

because some of the economic benefits arising from them will accrue to the enterprise, as well as to the individual.

Effective management of one's career involves more than simply maximising earnings. It is also about ensuring job satisfaction, and finding a career which can be effectively woven into the other demands on one's life, including private, family and community life. The ability to pursue these other concerns is very much part of human capital.

One motivational characteristic which may play a particularly important role is the willingness to trade current for future benefits – “future-directedness” (sometimes called “time preference” by economists). Future-directed individuals tend to take career planning more seriously and to make human capital investments which typically involve a trade off between current and future benefits. Bowles *et al.* (2001a) identify this characteristic as being attractive to employers because it increases the incentive for employees to avoid being caught shirking and hence lose their jobs. One might add that it will also increase the incentive to develop skills on the job, and to comply with instructions in the hope of future preferment. The characteristic of future-directedness therefore both supports the effective career planning which leads to higher earnings, and may increase earnings directly.

Writers on career guidance have arrived at a similar notion of self-management as part of human capital. The purpose of career education and guidance has been defined as that of enabling “pupils to develop the skills, attitudes and knowledge which will help them to make and implement career decisions, and so to manage their progression in learning and work throughout their lives” (Killeen *et al.*, 1999). It has been argued that the value of this activity includes that of reducing the market “imperfections” arising from issues like job mismatch or information failures in human capital investment, while also taking account of wider and non-economic objectives, including job satisfaction (Watts, 1999).

Twelve OECD countries have recently identified the key competencies they believed were important in the different spheres of working, family and community life (DeSeCo, 2001). Virtually all

countries identified “learning competence/lifelong learning” and “self-competence/self-management” as important. The latter involved “selecting goals for oneself, planning and implementing self-defined goals, coping with obstacles and redefining one’s goals”. These two domains both relate to wider human capital.

3.2 Can wider human capital help explain the outcomes of education?

This wider conception of human capital may help to explain some of the broader (non-economic) benefits of education. For example, OECD (2001a) shows that additional full-time education is associated with a reduced risk of smoking, better well-being, lower criminal involvement, and higher participation in community groups. Cognitive skills in isolation cannot easily explain these outcomes. Cognitive recognition of the well-advertised health risks of smoking, for example, requires no more than basic education. Conversely, a “future-directed” willingness to trade current pleasures for future health benefits, combined with self-discipline, is relevant to smoking behaviour. Those involved in crime have also often been identified as impulsive and without concern for the future (Gottfredson and Hirschi, 1990). Participation in civic life requires cognitive skills, but it also requires the disposition to see oneself as a “stakeholder” in society, a disposition with a “future-directed” dimension (Glaeser *et al.*, 2000). Collectively, these non-cognitive characteristics help to explain the non-monetary benefits of education. One implication is that achieving these benefits requires a broad-based education rather than one narrowly focused on cognitive skills.

The economic returns to individuals from particular courses of education and training vary considerably among individuals (Carneiro *et al.*, 2001). Prior ability and qualifications affect returns, and there is some evidence that, for this reason, enterprise training is concentrated on those who already have good initial levels of educational attainment (OECD, 1999), recognising that qualifications may be used by employers as a screening device to identify those with training potential. Successful learning not only requires prior cognitive skills such as literacy and numeracy: it also requires the motivation to learn, and the capacity to direct one’s own learning, an understanding of

how the qualification and associated skill can be applied, and knowledge of how to “sell” the skill to employers. One reason for poor returns from particular learner-course combinations may therefore be a lack of these wider forms of human capital – a lack which is hard to identify in advance. Conversely the returns from such skills include the capacity to reap higher returns from making better use of one’s human capital investment. This benefit may be very large, given that research has demonstrated high returns from upper secondary and tertiary education, and a wide variation around the average (Carneiro *et al.*, 2001; Blöndal *et al.*, 2002).

4. TOWARDS MEASUREMENT: THE LEARNING PROCESS

Not all of these wider forms of human capital can readily be measured, but there are some useful indicators. Self-management of learning includes both “macro” decisions about, for example, whether to enter tertiary education, and “micro” decisions about, for example, study strategies in support of learning objectives. The recent Programme for International Student Assessment (PISA) study of the competencies of 15-year olds in a number of OECD and non-OECD countries has cast new light on motivation and learning and the significance of self-directed learning (OECD, 2001b). (While many other personal attributes are of course also relevant to learning, it is these ones which have now been successfully measured.)

Within countries, students reporting a greater interest in reading achieved substantially better results in tests of reading literacy than those with less interest, and students reporting a greater than average interest in mathematics achieved somewhat better results in tests of numerical reasoning.¹ Moreover, those who said they like school also tended to achieve better results. These findings do not demonstrate causation: they could indicate that motivation leads to better performance, that better performance enhances motivation, or that some underlying factor enhances both motivation and performance. Perhaps the most plausible explanation is that motivation and performance are mutually reinforcing.

1. These results from PISA are discussed in more detail in Chapter 2.

In the PISA project, one aspect of students' capacity to manage their own learning was assessed by asking students how often they consider what they need to learn, look for additional required information, and check that they have remembered the most important things. Within each country, students who used such strategies more frequently tended to perform better on the reading scale, other factors being equal. The significance of this behaviour is not only that it contributes to school learning, but that it is a tool that can be used throughout life. In recognition of this, the first PISA report suggested that "schools may need to give more explicit attention to allowing students to manage and control their learning" (OECD, 2001*b*).

This view is reinforced by evidence that, for many adults with poor basic cognitive skills, failure to recognise their own human capital deficiencies is an underlying problem – and itself a shortfall in wider human capital. Among those performing at the lowest Level 1 of the prose literacy scale in the International Adult Literacy Survey, roughly the same number of people claim their reading skills are "excellent" (13%) as "poor" (11%). Of those who say that they are not at all limited by their reading skills in their opportunities for promotion or mobility at work, 40% are at Levels 1 and 2. Such findings point to the possibility that one of the main barriers to advancement for those with the weakest skills could be the way they assess and manage their own skills.

5. CONTEXTS FOR POLICY INTERVENTION

This section considers the roles of school, family and social environments in the development of wider forms of human capital (see Figure 5.1) – recognising that some of these environments are easier than others to influence by policy measures. The overall conclusion, however, is that recognition of the importance of wider forms of human capital implies a broadened public policy agenda to help build such capital.

5.1 The influence of schools

It is well established that the number of years an individual spends in education is correlated with subsequent earnings. A traditional debate

surrounds the question of whether this is to be interpreted as education promoting cognitive skills which increase earnings, or whether those with higher intellectual ability at the outset tend to stay longer in education and to have higher earnings. Recent research using longitudinal data sets and controlling for prior cognitive ability has shown that most of the earnings benefits reflect genuine increases in productivity driven by education (see Bedard, 2001; Harmon and Walker, 2001).

A wider conception of human capital gives a new twist to the story. Conceivably, greater career-planning skills and dispositions may lead to both a) longer time spent in education, and b) higher earnings. However such career-planning skills may be the effect as well as the cause of time spent in education. Education may foster relevant motivational characteristics, career-planning and job-search skills, and these may in turn contribute to higher earnings. Unfortunately, few data sets contain information about such characteristics, and thus on how successful schools may be in enhancing them. There is some positive evidence to suggest that schooling has an influence on various motivational characteristics, but it remains patchy (Bowles *et al.*, 2001*b*). Kuhn and Weinberger (2001) show that at least one type of broader ability – leadership skills – can be encouraged by offering opportunities for it to develop in the school setting. There is also evidence that career guidance in schools can contribute to developing career-planning skills (see Section 5.3).

5.2 The influence of parents

In many OECD countries, young people whose parents have completed some tertiary education are about twice as likely to participate in tertiary education as those whose parents lack upper secondary qualifications. Well-educated parents tend to be more affluent, encouraging their children, for example, to go to university through financial support. However, parental education may also affect the education of children more directly. First, education increases the cognitive skills and knowledge of parents, and therefore supports their capacity to explain things to their children and act as informal teachers. Second, better educated parents may pass on some wider aspects of human capital, both through example and through direct

encouragement. Such aspects could include a commitment to learning and a familiarity with learning strategies, a recognition of the labour market value of qualifications, and an understanding of how to best exploit that value.

There is some evidence that this second kind of influence may be important. Evidence from the United States shows that it is not possible to explain the persistence of intergenerational inequality simply by reference to the advantages of wealth or the inheritance or transmission of cognitive skills – suggesting that other personality characteristics passed from parent to child must also be important (Bowles *et al.*, 2001*b*). PISA shows that parental education plays a relatively modest role in determining cognitive skills at age 15,² particularly when set against the large absolute differences in subsequent rates of participation in tertiary education. One UK research study shows that parental interest in the schooling of children has a sustained impact, other things being equal, not only on the attainment of post-compulsory qualifications but also on the impact of that qualification on subsequent earnings (Dearden, 1998). The implication is that parental expectations may affect their children's motivation to stay in education. Tertiary students will very often be giving up current earning and spending opportunities in order to invest in their education and a future stream of benefits from that education – other things equal, they are likely therefore to be more future-directed. As Bowles *et al.* (2001*a*) argue, such a characteristic is likely to appeal to employers, irrespective of productive capacity. This result suggests that the contribution of parents may be some degree of future-directedness which is passed on to the child, perhaps combined with the ability to fully exploit their human capital in the labour market.

Other considerations support this view. While a teacher may be able to supply the cognitive explanations that a parent cannot, and some guidance on learning strategies, teachers face much greater challenges in seeking to motivate children and support them in the complex career decisions they need to make. The important role played by parents in this area underlines the significance of attempts by schools to work more closely with parents to help motivate and guide their children.

5.3 The social context and career guidance

Alongside parents, other family members, colleagues and friends play a role in career planning. What matters to the individual is not simply a wide circle of family and friends, but also that the people involved are trusted and well informed about career and educational opportunities. Within organisations, while technical skills may be acquired by formal training, identification of career-enhancing opportunities may depend much more on informal networking. In line with this view, a number of studies have shown that the acquisition of human capital is linked to access to social capital – in the sense of informal networks of trusted social contacts (OECD, 2001*a*). Such access will depend on individual social skills, as well as the existence of networks. Career management skills may go a long way to explaining this link.

Evidence of the potential for positive interventions comes from research on career guidance – the formal provision of information and advice to individuals on educational and career options. Guidance can be delivered by a range of methods, including one-to-one, group sessions, telephone and e-mail. Public provision is most commonly based in education institutions and the public employment service, but can also be based in community settings. Countries typically provide services in all of these settings, but the mix can vary widely (Watts, 1996).

Potentially, the individual benefits of guidance include better learning strategies and career decisions, and greater satisfaction with life. The collective benefits could include better targeted human capital investment and better matching of skills and jobs – and therefore higher output. Recent reviews (Killeen, 1996; Watts, 1999), mainly based on US and UK experiences, provide some positive evidence of short- and medium-term benefits, such that guidance:

2. Other factors held constant, each additional year of parental education is associated with an average increase of about 5 points across OECD countries in attainment on the combined reading literacy scale (OECD, 2001*b*). To put this figure in context, the bottom quarter of the student population was, in the average OECD country, 65 points or more below the mean student score.

- can promote positive attitudinal change, including greater interest in education and training and greater motivation to seek employment;
- has a number of positive effects on learning outcomes, including better decision-making skills and awareness of opportunities;
- may encourage participation in formal and informal education and training; and
- yields potential economic benefits in the form of the capacity to find satisfying jobs.

At the same time, many of the longer-term outcomes of career guidance are more difficult to pin down – because of the need for difficult and costly follow-up studies over a number of years.

6. IMPLICATIONS FOR POLICY AND RESEARCH

This chapter has two main conclusions. First, the skills and other characteristics involved in managing one's own human capital – including career planning, self-directed learning and job-search skills – play an important part in delivering both the economic and non-economic benefits of human capital. Second, while family and social environment play a strong role in the development of this wider form of human capital, and some motivational characteristics are difficult to influence, practical initiatives, such as effective support for self-directed learning strategies at school, and career guidance interventions, can encourage the development of such skills and characteristics.

The chapter opened by pointing to the need to integrate the economic and non-economic functions of education, against the background of debate between those who emphasise the economic mission of education and those emphasising the broader social and personal benefits. The widening of the concept of human capital set out in this chapter helps us to bridge this gap. On the one hand, it provides a more subtle understanding of how human capital supports economic output. Output and growth depend not only on direct productive capacities, but also on the ability to manage, develop and apply those capacities. On the other hand, the idea humanises our understanding

of human capital, by representing individuals as empowered managers of their own capital, responsible for its development through learning. It also recognises non-economic outcomes, and the societal dimensions of individual decision making about education, jobs and careers.

A number of policy implications stand out.

- First, governments might usefully *give greater emphasis to the capacity to manage one's own education and career* as a formal goal of education and training. While specific skills may become outdated, this capacity will remain of significance throughout life, supporting lifelong learning and career development. By its very nature, it embraces both economic returns and the wider, indirect benefits to be gained from different forms of education, training and employment. The PISA results have already demonstrated the importance of developing effective strategies to manage one's own learning and such skills may be of increasing importance in the face of developments in ICT-based learning. Schools might also do more to teach pupils about how to choose future courses, and how to search for and obtain jobs which are both satisfying and well-paid. Some very specific skills – such as interview technique and CV preparation – can be readily taught. A diverse set of characteristics and competencies are involved in the capacity to manage one's own career, and more formal and informal recognition of this wider range of competencies in curricula and qualification frameworks should help to entrench their acceptance alongside other more traditionally recognised skills.

- Second, *the role of formal career guidance needs to be broadened*. In particular, the traditional approach of individual guidance for young people towards the end of schooling is not enough. For young people, work experience schemes and community-based projects aimed at researching career opportunities represent promising options. Guidance may also need to be supplemented by relevant training – for example in job-search skills. For adults, guidance needs to be accessible to those in work, the unemployed and those of working age who are not in the labour force. Delivery of guidance therefore might take

place in the community, in the workplace and in educational institutions.

- Third, policies in this area need to *take account of the role played by families and peer groups* in key career-planning decisions. School-based teaching needs to build on and strengthen the social context of the individual learner's access to social capital, recognising the research evidence that parents and peers play important roles in developing motivation in the individual, and in supporting both learning and career planning. At the simplest level, parents could become more involved in their children's education, particularly at school. More challengingly, schools could work more closely with parents to enhance their skills in motivating and guiding their children, reaching out, in particular, to disadvantaged families. This would open up the possibility of using parental understanding of career options and planning to support and develop that of the child, and may help to foster a role for the parent, not only in self-directed learning at school, but also in subsequent career decisions (see OECD, 1997). Some useful impact on parents' own career decision-making is also possible.
- Finally, a question arises of how and if *education might seek to encourage desired motivational characteristics*, in addition to cognitive skills. Motivation cannot be created out of nothing, but an educational institution can act to encourage behaviour based on desirable motives, and discourage others.

Data on wider human capital are currently limited, and research is at an early stage. Policy development therefore should be cautious, and needs to go hand-in-hand with further research and data collection. Practical initiatives, such as those outlined above, need to be piloted and evaluated. Follow-up studies will be necessary to see if interventions have fostered competencies, and to see if those competencies have had a valuable impact. Such targeted evaluations will need to be underpinned by a broader research programme on

the benefits from wider human capital. Both policy and research issues will need to be addressed in the OECD's own programme of work.

More generally, while there is an emerging literature on personality characteristics and their effect on earnings, there are few sources on competencies such as career planning, job-search skills and associated motivational characteristics. Measuring such skills would be challenging, but certainly not impossible, and could be pursued at two levels. At a general level, broad traits such as "future-directedness" could be measured alongside education and earnings, to explore the extent to which they might explain variations in earnings. Any new survey of adult skills could usefully address this issue, both by exploring learning strategies and by collecting information on factors such as course choice, career planning and "future-directedness". At a more specific level, measurement might be targeted at the labour market relevance of particular teachable skills – for example, one could explore whether skills in Internet searches and access to a computer are related to appropriate choices of courses in further and higher education.

The time dimension is central to wider human capital, concerned as it is with the development over time of learning and career paths. Longitudinal studies would be particularly well-suited to identifying the value of career management skills, and the long-term economic and non-economic benefits.

Current efforts in PISA, and elsewhere, to understand the relationship between interest in learning, strategies to direct learning and the acquisition of cognitive skills, need to be pursued. One policy question on which research might cast light is whether there are key points of intervention – for example, different styles of teaching designed to engage disaffected adolescents – which might lead to a virtuous circle of motivation and learning. A better understanding is needed of the scope of education to encourage positive attitudes and motivation, and about the methods that work and those that do not.

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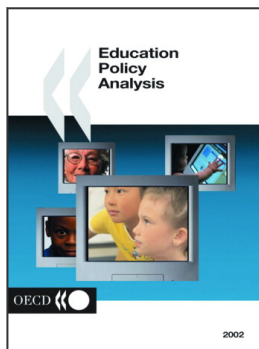
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