Theorising the Role of Public Vocational Education Institutions Using the Capabilities Approach

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Abstract

This paper observes several limitations of human capital theory, both as a description of the way qualifications are used in the labour market, and in severely limiting the potential roles vocational education. It proposes as an alternative the human capabilities approach which posits that the goal should be for everyone to have the capability to be and do what they have reason to value. The paper reports the application of human capabilities as productive capabilities which are located in and concentrate on an intermediate specialised level, the vocational stream which links occupations that share common practices, knowledge, skills and personal attributes. The paper reports an application of the concept of productive capabilities to seven countries: Argentina, Australia, Côte d'Ivoire, England, Ethiopia, Germany, South Africa and Taiwan. From this the report finds that productive capabilities rest upon broader social, economic, cultural, and physical resources.

Keywords

capabilities; vocational education; anchor institutions

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1   Dominance and limitations of human capital theory

Policy on vocational education and indeed higher education in many countries is dominated by augmented human capital theory. Human capital theory is mainly a descriptive theory that postulates that education increases graduates' skills which makes them more productive which in turn increases economic value (Figure 1). From this many derive a normative position, that the aim of education should be to increase economic value.

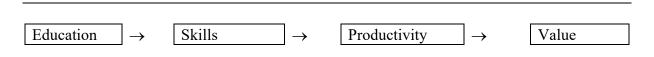| Education | → | Skills | → | Productivity | → | Value |

Figure 1   Education's contribution to economic value posited by human capital theory

Human capital theory is understood to apply at the level of the individual, group, and whole economy. Individual graduates' higher employment outcomes are ascribed to their increased human capital; more educated workers are thought to increase their productivity and hence the organisation's profitability; increasing the qualifications of members of an occupation such as technicians or financial advisers is expected to increase their effectiveness; and increasing the proportion of an economy's workers with higher qualifications is understood to increase economic growth, at least in specified circumstances.

Equity policy may also be based on human capital. The under representation of women in engineering, for example, and in senior positions is said to lose the economy valuable potential talent as well as disadvantaging women; and the lower proportions of qualified people from disadvantaged groups is thought to 'waste' human capital as well as disadvantaging individuals. Of course, equity policy may be based on other grounds, such as social inclusion (Vinson, 2009), or broad notions of justice, but a policy maker seeking a parsimonious description of policy could include most equity aims within human capital theory.

But human capital theory does not explain the roles of qualifications adequately: some employers use qualifications not to signal relevant knowledge and skills but to screen for employment potential (Hungerford & Solon, 1987; Spence, 1973; Stiglitz & Weiss, 1990); qualifications prepare high proportions of graduates for skilled work outside their educational field (Montt, 2015, p. 11; Moodie & Wheelahan, 2018, pp. 3–4; Sutherland, 2012, p. 622); qualifications have intrinsic educational value as well as generating cultural and social benefits capital (Walker & Unterhalter, 2007); and education institutions contribute to their communities' educational, social, cultural and economic development beyond educating skilled workers.

2   Alternative: Human capabilities

An alternative is the human capabilities approach developed by the economics Nobel laureate Amartya Sen (2000, pp. 18, 285) and the philosopher Martha Nussbaum (2000, pp. 71, 78–80) who argue that the goal should be for everyone to have the capability to be and do what they have reason to value. We argue that vocational education's role in developing human capability is to develop each student as a person, as a citizen, and as a worker. By developing each student as a person, we refer to tertiary education's role in developing students' capacity to understand and manage themselves, to understand and manage their environment, and to appreciate and contribute to human culture. By 'developing each student as a citizen', we refer to vocational education's role in developing students' capacity to contribute to their community and to participate in the governance of their society. By developing each student as a worker, we refer to vocational education's role in developing students' capacity to be and do in work what they have reason to value.

We apply the human capabilities approach to vocational education by considering what people are able to 'be and do' at work and through work to realise themselves and their goals. We understand productive capabilities to refer to the resources and arrangements of work and the broad knowledge, skills and attributes that individuals need to be productive at work, to progress in their careers, and to participate in decision-making about work. Vocational education students need to understand how their field of practice fits within their communities and societies, and they require the capacity to be 'citizens' within their field, so they can help shape its future.

Productive capabilities are located in and concentrate on an intermediate specialised level, the vocational stream. A vocational stream links occupations that share common practices, knowledge, skills and personal attributes. Vocational streams increase horizontal flexibility and transferability at work by linking occupations in a broad field of practice and increase vertical flexibility and progression by supporting education and occupational progression in a broad field of practice.

3   Case Studies

We tested the capabilities approach by applying it to case studies of seven countries of different intensities using different methods, which are set out in Table 1.

Table 1   Methods used for each national case study

Country	Literature review	Statistics secondary analysis	On line survey	Interviews	Country visit
Argentina	✓	✓			
Australia	✓	✓	✓	✓	✓
Côte d'Ivoire	✓	✓	✓	✓	✓
England	✓	✓	✓	✓	✓
Ethiopia	✓	✓			
Germany	✓	✓			
Taiwan	✓	✓	✓	✓	✓

We added a case from South Africa described by Powell and McGrath (2019) because it is such a rich application of the capabilities approach to vocational education. We identified one issue from each case which has wider implications. The identification of an issue from a case does not imply that the issue did not arise from other cases, nor even that the issue arose most starkly in the case we identify.

3.1 Argentina: Capacity for collective action

In several reviews of Argentina in the late 2000s the OECD (2017, p. 35) argued for Argentina to improve its governance generally, including its governance of vocational education. Low trust in governance led to low public and private investment in infrastructure, the low quality of infrastructure and to high costs (OECD, 2017, pp. 44–45).

Other countries also suffer from lack of confidence in governance. Transparency International (2018) collects the perceptions of 'experts and business people' on the 'levels of public sector corruption'. It ranks 180 countries and territories on 'a scale of 0 to 100, where 0 is highly corrupt and 100 is very clean. More than two-thirds of countries score below 50 on this year's CPI, with an average score of just 43' (Transparency International, 2018). While

Argentina had a transparency score of only 40, Côte d'Ivoire and Ethiopia have lower transparency scores (Table 2).

Table 2   Transparency International's transparency score, selected countries, 2018

Country	Score
Germany	80
United Kingdom	80
Australia	77
Taiwan	63
South Africa	43
Argentina	40
Côte d'Ivoire	35
Ethiopia	34

Source: Transparency International (2018)

3.2 False Bay College, Cape Town: Physical integrity

Powell and McGrath (2019, p. 66) identify capabilities from their deep interviews of 20 students and graduates of False Bay College in Cape Town, South Africa. Not all capabilities are equally within the college's ability to expand. Powell and McGrath (2019, p. 153) report the outcome of the college's attempt to expand its students' bodily integrity:

> To reduce the dangers involved in using public transport, the college tried to arrange buses to collect students at local stations and transport them to their campus. However, the taxi companies threatened to burn the buses and the students in them, forcing the scheme to be abandoned. (p. 153)

This is an issue not just for South Africa as an upper middle-income country with extremely high income inequality (Beaubien, 2018), but some USA institutions also have difficulty ensuring the safety of their students travelling in their campus neighborhoods. Some elite USA universities have established community partnerships to invest in the renewal of their neighborhoods (Melhuish, 2016; Paul, 2004; Romano, 2006). Physical integrity includes being adequately nourished and having adequate shelter which Nussbaum (2000, p. 78) includes as part of 'bodily health' and the security of one's property.

3.3 Côte d'Ivoire: Minimal infrastructure requirements

One of the challenges the Ivorian government has identified for its vocational education system is the obsolescence and decay of its equipment and buildings (METFP, 2016) which is a legacy of the civil war, lack of funding, and the instability of vocational organisation and governance. Vocational education lacks computer equipment. Classrooms are without windows when they are not just outdoor courts. In one college visited by a member of our research team, the mechanics workshop had only one engine, more than thirty years old, and which does not work. As a result, mechanics students receive a mainly theoretical training and try to learn from Internet clips of current engines.

Vocational education and, indeed, most activities depend on physical infrastructure: utilities such as water, power, and telecommunications; transport such as roads; waste disposal; buildings; and equipment. Activities also depend on 'soft infrastructure' (Gu, 2017), institutions which enable societies to operate such as the legal system, the finance system, and emergency services (Hamutuk, n. d.).

3.4 Ethiopia: Strengthening the informal economy

Around half of Ethiopia's workers are employed in the informal economy outside agriculture, about the same rate as Argentina (Table 3). Some countries have even a bigger informal economy. A very high 88% of non-agricultural workers in Côte d'Ivoire work in the informal economy. The International Labour Organization (2013) estimates that most OECD countries have much smaller levels of informal employment. Even so, the levels of informal employment are sizeable even in wealthy countries, and they are increasing in some countries (International Labour Office, 2018, p. 15). And in both developed and in developing countries workers in the informal economy are more likely to be poor (International Labour Organization, 2018, p. 6).

Table 3   Informal employment as % of non-agricultural employment

Country	Informal employment, %
Côte d'Ivoire	88
China	54
Ethiopia	c 53
Argentina	50
South Africa	35
Australia	c 14
United Kingdom	13
Germany	10

Source: International Labour Organization (1996–2019; 2018, pp. 85–90; 2013)

Most vocational education funded by government is in formal institutions which are not well established to serve the informal economy, and this is a challenge in many countries.

3.5 Australia: Developing institutions, systems and teachers

Australian private providers increased their share of publicly funded vocational education and training equivalent full time students from 12% in 2008 to 43% in 2017 (Wheelahan, Moodie, Lavigne, & Samji, 2018, p. 44). This huge increase is the direct outcome of policies of Australian federal and state governments, first to marketise and then to privatise vocational education and training. By marketise we mean governments' allocation of resources by a competition, typically for students. In this context privatisation refers to the extension of public subsidies to for-profit private training providers.

This resulted in public funds subsidising private profits, a considerable waste of public funds on programs private providers found most profitable, widespread exploitation of students, numerous scandalous market abuses and rorts (Wheelahan et al., 2018, p. 19), and legal prosecutions (Taylor & Branley, 2015).

Marketisation and privatisation have seriously weakened vocational education as providers have competed by cutting provision and lowering standards. Public colleges have been seriously weakened, thousands of teachers and education support workers have been sacked, and campuses have been closed throughout Australia.

3.6 England: Adequate resourcing

The number of adults aged 19 and above in various English vocational education programs other than apprenticeships and community education fell by 36% from 2012/13 to 2017/18 due to substantial increases in fees, substantial cuts in funding and competition from higher education, most of whose enrolments are not capped. The recent major review of post-education

and funding in England chaired by Philip Augar (2019, p. 119) found that total spending on adult skills fell by approximately 45% in real terms between 2009/10 and 2017/18.

3.7 Germany: Trust and Coordination between social partners

Many analysts outside continental Europe do not appreciate how much Germany's very strong vocational education and particularly its dual apprenticeship system is based on strong coordination and mutual trust between the social partners: employers, trade unions and government, at several levels from national to local. This coordination extends deeply not only into vocational senior secondary and postsecondary education, but also into employment and the organisation of work. Dual apprenticeships prepare graduates for 327 recognised training occupations regulated by the state (Bundesinstitut für Berufsbildung, 2016). Cooperation between the social partners of employers, trade unions and federal and state governments is based on consensus which builds trust in the dual system.

3.8 Taiwan: Educating the whole person

Taiwanese vocational education is strongly shaped by Confucianism in two ways. Confucianism accords highest value to scholars and scholarship, and accordingly lower value to manual work and thus vocational education. Respondents to our team's survey identified this as a challenge for vocational education's development in Taiwan (Mou, Lavigne, Rostamian, Moodie, & Wheelahan, 2018, p. 33), although it is not clear that this is more of a problem for vocational education in Taiwan than in many other countries.

Vocational education in Taiwan is also strongly shaped by Confucianism's emphasis on whole-person education, the view that the ultimate aim of education is to cultivate a full person who knows how to appreciate life and pursue happiness, and who understands that professional skills are but one part of a whole person. So in addition to attaching much importance to practice and internships, vocational education in common with academic education includes humanities and the arts as indispensable components of individuals' competencies. Accordingly, technical and vocational institutions include studies in the humanities, arts, languages, and education in their curriculum. Campus's physical and cultural environments are designed to promote virtue, and virtue and moral action are key parts of the evaluation of students (Mou et al., p. 14).

4 Implications for Technical and Vocational Education and Training

Our case studies illustrate that peoples' capabilities depend on their context and on the conditions of their society such as public health, the quality and level of education of fellow citizens, means for transport and communication, means of collective decision making, means of collective action, means of exchange of goods and services, and the sharing of facilities and resources. In particular, social capacity includes a society's capacity to support and foster the capabilities of people who are disadvantaged by, for example, having fewer resources, knowledge, skills or abilities, access to capacities, or suffering discrimination.

This has implications for vocational education's development of its students, communities, and of occupations and industries. All post-secondary qualifications should have these three roles, although the emphasis on each role may differ with each qualification:

1. *Labour market*. Qualifications should provide entry to and progression in the workforce.
2. *Education*. Qualifications should provide students with the knowledge and skills they need to study at a higher level in their field or a closely related field.
3. *Society*. Qualifications should contribute to society by developing students' appreciation of and contribution to culture and society.

Vocational education to develop productive capabilities would develop individuals in three domains:

1. *The knowledge base of practice.* This includes the theoretical knowledge needed for the field of practice, but also for higher-level study within the occupation. It also includes knowledge about the history and trajectory of their field of practice, ethical dilemmas and debates, and knowledge about sustainable practices.
2. *The technical base of practice.* This includes industry knowledge and skills, or the ability to perform particular roles and tasks, that transcend particular workplaces.
3. *The attributes the person needs for that occupation.* This includes attributes such as ethical practice, but also effective communication skills, the capacity to work autonomously and in teams, creativity, information management and so forth. While these are sometimes described as general or generic, they are understood differently in different fields of practice and need to be developed in specific disciplines and occupations. Since capabilities are embedded in their context, productive capabilities require an understanding of the nature of work, the relationship between education and work, and the kind of qualified person we want to produce.

Vocational education have an important role anchoring their communities by:

1. proactively working with other key social partners in the region and nationally (where appropriate) to support sustainable social and economic development;
2. anticipating, elaborating, codifying and institutionalising the knowledge base of practice for the future as well as the present and in considering the way work is changing and the implications that this has for a curriculum for the future. This is a crucial role that would support innovation, and requires appropriately qualified and supported teachers who engage in the scholarship of teaching and learning and in research on the way their field is changing;
3. offering students a sufficiently comprehensive range of programs that enable them to realise their aspirations and providing students with the broad range of services and supports that are needed to successfully achieve their goals; and,
4. developing qualifications that meet the needs of students, communities, local industries and regions.

Vocational education also has important roles developing occupations and industries. It:

1. Is a reservoir of accumulated expertise and resources;
2. Is expert in organising knowledge, restructuring knowledge for new purposes, and presenting it for new audiences (teaching);
3. Transfers new ideas from outside the occupation and local industry; and
4. Has a potentially valuable role in codifying, restructuring, and systematising rules and procedures of practice, not only to construct curriculum, but to establish assessment standards which can be important industry standards.

To fulfill these roles vocational education needs to have strong institutions with expert and well supported staff. Vocational education also needs to become institutionalised in the sociological sense of being generally understood by the public with established norms and organisational forms which are reinforced by the expectations and behaviour of other institutions, organisations and actors.

Acknowledgement

References

Augar, P. (chair) (2019). *Independent panel report to the review of post-18 education and funding*. Post-18 Education and Funding Review Panel. Retrieved from https://www.gov.uk/government/publications/post-18-review-of-education-and-funding-independent-panel-report

Beaubien, J. (2018, April 2). "The country with the world's worst inequality is ...." NPR. Retrieved from https://www.npr.org/sections/goatsandsoda/2018/04/02/598864666/the-country-with-the-worlds-worst-inequality-is

Bundesinstitut für Berufsbildung (BiBB, Federal Institute for Vocational Education and Training) (2016). List of training occupations within the dual system. Retrieved from https://www.anerkennung-in-deutschland.de/media/2016_Liste_Ausbildungsberufe_EN.pdf

Gu, Q. (2017). Editorial: Integrating soft and hard infrastructures for inclusive development. *Journal of Infrastructure, Policy and Development*, *1*(1), 1–3.

Hamutuk, L. (no date). Civil society comments on infrastructure strategic sector. Retrieved from https://www.laohamutuk.org/econ/14TLDPM/InfraCSOen.pdf

Hungerford, T., & Solon, G., (1987). Sheepskin effects in the returns to education. *The Review of Economics and Statistics*, *69*(1), 175–177.

International Labour Office (2018). Women and men in the informal economy: A statistical picture (third edition). Geneva: ILO. Retrieved from https://ilo.userservices.exlibrisgroup.com/view/delivery/41ILO_INST/1252879760002676

International Labour Organization (1996–2019). Informal employment. Retrieved from https://data.worldbank.org/indicator/SL.ISV.IFRM.ZS?view=chart

International Labour Organization (2013). Women and men in the informal economy: a statistical picture, second edition, International Labour Office, Geneva, retrieved from http://www.ilo.org/stat/Publications/WCMS_234413/lang--en/index.htm

International Labour Organization (2018). Informality and non-standard forms of employment. Prepared for the G20 Employment Working Group meeting 20-22 February 2018, Buenos Aires. Retrieved from https://ilo.userservices.exlibrisgroup.com/view/delivery/41ILO_INST/1255489780002676

Melhuish, C. (2016, April 2). In urban development, universities can be better neighbours. *Times Higher Education*. Retrieved from https://www.timeshighereducation.com/blog/urban-development-universities-can-be-better-neighbours#survey-answer

METFP. (2016). *Réforme de l'enseignement technique et de la formation professionnelle 2016-2025* (p. 107). Abidjan, Côte d'Ivoire: Ministère de l'Enseignement Technique et de la Formation Professionnelle, République de Côte d'Ivoire.

Montt, G. (2015). The causes and consequences of field-of study mismatch: An analysis using PIAAC. Paris: OECD social, employment and migration working papers, number 167, OECD Publishing. Retrieved from http://dx.doi.org/10.1787/5jrxm4dhv9r2-en

Moodie, G., & Wheelahan, L. (2018, September 26). Implications of the human capability approach for relations between Australian vocational and higher education. Paper prepared for Monash Commission's designing the future seminar. Melbourne: Monash University. https://commission.monash.edu/@the-discussion/2018/10/19/1362822/designing-for-the-future-working-group-resources

Mou, L., Lavigne, E., Rostamian, A., Moodie, G., & Wheelahan, L. (2018). TVET in Taiwan: Preliminary report. Brussels: Education International. Retrieved from https://issuu.com/educationinternational/docs/2018_eiresearch_TVET_taiwain_preli

Nussbaum, M. (2000). *Women and human development: the capabilities approach*. Cambridge: Cambridge University Press.

OECD (2017). *OECD economic surveys: Argentina 2017: Multi-dimensional economic survey*. OECD Publishing, Paris. http://dx.doi.org/10.1787/eco_surveys-arg-2017-en

Paul, N. C. (2004, September 14). Beset by New Haven's ills, Yale revitalizes city. *Christian Science Monitor*. Retrieved from http://www.csmonitor.com/2004/0914/p01s02-ussc.htm

Powell, L., & McGrath, S. (2019). *Skills for human development: transforming vocational education and training*. Milton Park, Oxon: Routledge.

Romano, L. (2006, January 9). Urban colleges learn to be good neighbors. *Washington Post*. Retrieved from http://www.washingtonpost.com/wp-dyn/content/article/2006/01/08/AR2006010801164_pf.html

Sen, A. (2000). *Development as freedom*. New York: Anchor Books.

Spence, M. (1973). Job market signaling. *The Quarterly Journal of Economics*, *87*(3), 355–374.

Stiglitz, J., & Weiss, A. (1990). Sorting out the differences between signalling and screening models. Technical working paper number 93, Cambridge, MA: National Bureau of Economic Research.

Sutherland, J. (2012). Qualifications mismatch and skills mismatch. *Education + Training*, 54(7), 619–632.

Taylor, J, & Branley, A. (2015, April 30). ACCC expected to lay charges against unethical private training colleges to set example. *ABC*. Retrieved from http://www.abc.net.au/news/2015-04-30/accc-to-lay-charges-against-unethical-private-training-colleges/6435210

Transparency International (2018) Corruption perceptions index 2018. Retrieved from https://www.transparency.org/cpi2018

Vinson, T. (2009). The origins, meaning, definition and economic implications of the concept of social inclusion/exclusion. Canberra: Australian Government Department of Education, Employment, and Workplace Relations.

Walker, M., & Unterhalter, E. (2007). Conclusion: Capabilities, social justice, and education. In Melanie Walker & Elaine Unterhalter (Eds.), *Amartya Sen's capability approach and social justice in education* (pp. 239–254). New York: Palgrave Macmillan.

Wheelahan, L., Moodie, G., Lavigne, E., & Samji, F. (2018). *Case study of TAFE and public vocational education in Australia: Preliminary report.* Brussels: Education International. Retrieved from http://hdl.voced.edu.au/10707/499717

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