

IMPLICATIONS OF THE HUMAN CAPABILITY APPROACH FOR RELATIONS BETWEEN AUSTRALIAN VOCATIONAL AND HIGHER EDUCATION

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Introduction

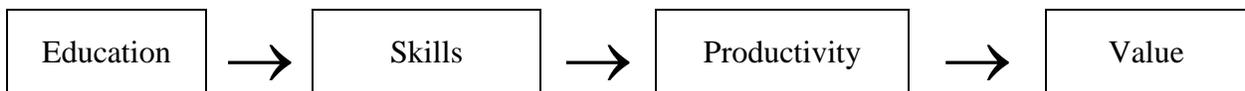
This paper considers some implications of the human capability approach for relations between Australian vocational and higher education.

We start by arguing that since the 1960s tertiary education policy in Australia and many other countries has been informed by augmented human capital theory. While we do not deny the economic benefits of tertiary education, we argue that this is a limited basis for tertiary education policy. We argue that a better basis for tertiary education is developing human capability: the capability of people to be and do what they have reason to value. We consider some implications for tertiary education and in particular for tertiary education qualifications. We then consider implications for relations between Australian vocational and higher education, and in particular, transfer between the sectors.

Limitations of human capital theory

Since the 1960s tertiary education policy in Australia and many other countries has been informed by augmented human capital theory. This is the view that education increases graduates' skills which makes them more productive which in turn increases economic value (Figure 1).

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 tertiary graduates' higher employment outcomes are ascribed to their increased human capital; increasing the education of an organisation's workers is 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 tertiary qualifications is understood to increase economic growth, at least in specified circumstances.

Much equity policy is also 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 individual women, and the lower proportions of tertiary 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 social inclusion (Vinson, 2009) or broad notions of justice, but a policy maker seeking a parsimonious description of policy could include most equity aims in human capital theory.

But even the most utilitarian and materialist of tertiary education systems includes some provision of education for its own sake, to for example, cultivate the creative arts, to advance the liberal arts and sciences, and to ponder the questions of theology. Such provision tends to be bigger in institutions offering elite than in those offering mass and universal higher education, and bigger in higher education than in vocational education and training. Yet even Australian vocational education and training offers programs in dance, history, music, theology and visual arts (Australian Government Department of Education and Training, no date). Since tertiary education's provision of liberal, creative and contemplative studies cannot be justified by human capital theory, human capital theory needs to be augmented to justify this provision, and this is often done through arguments that assert the value of knowledge and skills acquired in these programs to the labour market.

But human capital theory is a less satisfactory basis for tertiary education policy than by simply being incomplete. First, a common narrow interpretation of human capital theory does not explain fully the use of most qualifications in the workforce. Australian vocational education and training qualifications are most directly related to work: training packages comprise competencies derived from work tasks. Yet two-thirds of Australian vocational education and training graduates do not get jobs in the occupations for which they were ostensibly trained. Table 1 shows results of the survey of vocational education and training graduates who completed their programs in 2016. Some 77% of graduates were employed at the time the survey was conducted in mid 2017, but only 33% were employed in the occupation for which they were ostensibly trained. A further 28% reported that while they were employed in a different occupation, their vocational program was relevant to their occupation.

Table 1: employment of government funded vocational education and training graduates by occupation group, 2016

Intended occupation	In same occupation	In different occupation, training relevant	In different occupation, training not relevant	Total employed	Not employed	Total
Managers	12.3	54.8	13.3	82.6	17.4	100
Professionals	18.6	32.4	20.9	73.3	26.7	100
Technicians and trades workers	45.3	22.7	12.1	81.6	18.4	100
Engineering, ICT and science technicians	14.9	35.1	17.1	69.4	30.6	100
Automotive and engineering trades workers	69.3	16.1	5.6	91.7	8.3	100
Construction trades workers	76.8	9.8	5.6	92.9	7.1	100

Intended occupation	In same occupation	In different occupation, training relevant	In different occupation, training not relevant	Total employed	Not employed	Total
Electrotechnology and telecommunications trades workers	73.0	11.5	5.2	90.2	9.8	100
Food trades workers	51.9	20.9	8.5	82.9	17.1	100
Skilled animal and horticultural workers	44.6	17.9	17.0	81.3	18.7	100
Other technicians and trades workers	21.0	32.2	19.1	74.7	25.3	100
Community and personal service workers	42.9	19.2	12.4	76.3	23.7	100
Carers and aides	55.5	11.9	7.9	76.8	23.2	100
Clerical and administrative workers	13.2	40.6	16.8	72.7	27.3	100
Sales workers	32.4	31.2	12.3	77.2	22.8	100
Labourers	24.1	36.3	15.1	78.5	21.5	100
All	33.2	28.2	14.2	77.4	22.6	100

Source: National Centre for Vocational Education Research (2016) Table 32: Occupational destination and training relevance for government-funded graduates by various training characteristics, 2016.

A common response to what is often called the ‘mismatch’ between tertiary education qualifications and work is to argue that qualifications should be more closely related to the jobs for which they are meant to prepare graduates. This is wrong for at least two reasons. First, tying education even more closely to a particular occupation would reduce its relevance to the other occupations for which qualifications are currently relevant, which was 28% of all Australian vocational education and training graduates in 2016.

The second reason why it is wrong to try to increase the match between education and work by further narrowing the supply of graduates is that it ignores the role of the demand for graduates in shaping the match between education and work. The bolded occupations in Table 1 are broad occupational groups. We note a very wide variation in the proportion of graduates working in the occupation for which they had ostensibly been trained, from 12% for managers and 13% for clerical and administrative workers, to 43% for community and personal service workers, and 45% for technicians and trades workers. The occupations in normal type under technicians and trade workers are the occupations which make up technicians and trades workers. Here again we note a very wide variation in match, from 15% for engineering, ICT and science technicians; to 77% for construction trades workers; 73% for electrotechnology and telecommunications trades workers; and 69% for automotive and engineering trades workers. The occupations for which

there are very high matches between education and work are in the traditional trades, such as the building trades, electricians, and mechanics. Within the broad group community and personal service workers there are carers and aides, 55% of whom were in the occupation for which they had been educated. This includes child care workers and aged care works, two industries that have been regulated by the Australian Government following widespread failures of quality and standards.

We now examine similar data for higher education (Table 2). We note, first, that just over half (52.6%) of graduates in full time employment reported that their qualification was a formal requirement for their job in 2015. But there were considerable variations by aggregated field of education. Proportions were very high for dentistry (97%), medicine (95%), rehabilitation (89%), pharmacy (88%), veterinary science (86%), initial nursing (84%), post initial nursing (81%), and initial education (81%). These occupations are regulated and high proportions of graduates proceed to their corresponding occupation. In contrast some occupations are regulated but high proportions of graduates proceed to other occupations, such as accounting (50%), engineering (ranging from aeronautical 35% to chemical 68%), and law (51%).

Qualifications were a formal requirement of only low proportions graduates in social sciences (17%), visual/performing arts (22%), agriculture (25%), humanities (25%), psychology (25%), and education – post/other (25%).

Qualifications were important for almost 20% of graduates' employment, and was important even for graduates of programs which were not closely related to an occupation, such as humanities (24%), visual/performing arts (24%), physical sciences (23%), mathematics (21%), and languages (20%). This suggests that tertiary education may be relevant to employment though it is not particularly applied or focussed on an occupation.

Table 2: proportion of higher education graduates in full time employment whose qualification was a formal requirement and important for their employment, 2015

Aggregated field of education	Formal requirement	Important	'Formal requirement' + 'Important'
Agriculture	24.7	31.6	56.3
Architecture	40.0	31.1	71.1
Building	40.0	32.2	72.2
Urban & regional planning	61.1	14.1	75.2
Humanities	24.8	23.9	48.7
Languages	33.2	19.6	52.8
Visual/performing arts	22.0	23.7	45.7
Social sciences	17.2	22.7	39.9
Psychology	24.6	21.2	45.8
Social work	51.7	25.1	76.8
Business studies	28.6	30.4	59.0
Accounting	50.2	25.9	76.1
Economics	41.3	28.1	69.3

Aggregated field of education	Formal requirement	Important	'Formal requirement' + 'Important'
Education - initial	81.0	10.4	91.4
Education - post/other	25.0	37.5	62.5
Aeronautical engineering	34.8	10.6	45.5
Chemical engineering	68.3	12.9	81.2
Civil engineering	61.2	20.8	82.0
Electrical engineering	55.9	21.5	77.4
Electronic/computer engineering	38.1	33.6	71.7
Mechanical engineering	59.6	17.7	77.3
Mining engineering	67.6	16.2	83.8
Other engineering	55.6	21.8	77.4
Surveying	43.4	42.1	85.5
Dentistry	97.1	2.9	100.0
Health, other	67.1	11.2	78.4
Nursing, initial	83.9	10.6	94.5
Nursing, post-initial	81.0	10.0	91.0
Pharmacy	88.3	9.2	97.5
Medicine	95.1	3.5	98.6
Rehabilitation	88.7	5.6	94.4
Law	50.6	22.7	73.4
Law, other	30.8	25.4	56.3
Computer science	33.0	33.9	66.8
Life sciences	32.4	18.2	50.5
Mathematics	52.1	20.7	72.9
Chemistry	32.4	18.9	51.4
Physical sciences	40.7	23.3	64.0
Geology	50.4	8.5	59.0
Veterinary science	86.2	7.2	93.5
Total	52.6	19.9	72.5
Total number	14,660	5,546	20,206

Source: Graduate Careers Australia (2016) T 25: Relationship between qualification and full-time employment, bachelor degree graduates, by aggregated field of education, 2015 (%)

All the occupations for which there is a close match between education and work are strongly and explicitly structured, either by state regulation, by occupational associations, or by collaboration between employer and employee associations. The structuring and formal and informal regulation of occupations shapes the related education. That is, the match between education and work may be increased not by narrowing education, but by structuring work which in turn shapes education.

While this very variable match between education and work is not explained by the common narrow interpretation of human capital theory, it may be at least partly explained by a broader understanding of human capital. While education may not develop specific occupational skills, it may nevertheless develop skills that contribute to productivity more generally. This is not an argument for general or so-called ‘generic’ skills. Developing a specialised skill in depth such as mathematics or law may develop skills that are valuable in many occupations. The variable match between education and work may also be partly explained not by an even broad understanding of human capital, but by signaling and screening. Qualifications may not (only) increase graduates’ skills relevantly for employment, but signal that they have attributes valued by employers such as general aptitude, application, and determination (Spence, 1973). That is, employers may not use qualifications to select workers who have relevant skills, but to screen applicants for potential to be productive workers.

The second reason why human capital is an unsatisfactory basis for tertiary education policy is that it does not account for tertiary education’s manifest and manifold benefits to graduates beyond the workplace. It is now well established that tertiary graduates in Australia and elsewhere have better health, participate more in civic activities, volunteer more for community activities, and generally have higher social capital. These non-employment and non-economic benefits of tertiary education have not been overlooked by Australian universities, which have long had a tripartite mission of teaching, research and community service. Universities invest much effort in constructing opportunities for their students to participate in extra-curricular activities, service learning, study abroad, and many other activities to develop graduates beyond the workforce. Rather, none of these benefits is accounted for by human capital theory, and by basing tertiary education policy on augmented human capital theory one either overburdens the theory with successive augmentations, or risks the continuity of these broader roles. An example is the previous conservative Victorian Government’s attempts to reduce this broader role of TAFE institutes to ‘community service obligations’ which may be individually specified, costed, and funded in short term fee for service contracts which may be awarded by competitive tender between supposedly interchangeable providers.

Another example of the way in which the application of human capital principles undermine individual choice and agency in vocational education is through limiting public funding and/or income contingent loans for fees to qualifications linked to occupations that are deemed to be in demand in the economy. This is misguided for two reasons: first, as we have already demonstrated, most graduates including in vocational education do not find jobs in occupations related to their qualification, so the policy is pointless. Secondly, the policy denies students in vocational education choice by not providing them with access to qualifications and programs that reflect their aspirations. Students in universities are not faced with such restrictions; they are able to pursue qualifications that reflect their aspirations and receive publicly backed income contingent loans to do so.

Thirdly, human capital does not account for tertiary education institutions’ institutional role in developing communities, occupations, and industries. This is beyond graduating students with high occupational skills and high social capital. It is also beyond the economic benefit of the employees’ wages and purchases of a public facility such as a hospital, museum, or prison.

Tertiary education institutions include an accumulation of educational facilities such as workshops, laboratories, libraries, lecture theatres and seminar rooms; and of knowledge and expertise in a range of fields. Importantly, tertiary education institutions institutionalise systems of work, or ways of mobilising their resources and expertise to develop, transmit and diffuse knowledge for different purposes. This includes the familiar roles of offering expertise, advice and consulting services formally and informally through diverse associations; of contributing to boards and committees; but also initiating the extension and reconstitution of knowledge and resources to meet new needs and stimulate new developments.

This broader role of tertiary education institutions is demonstrated by Wheelahan (2017: 26; 2018: 17), who explains that TAFE institutes anchor their communities by:

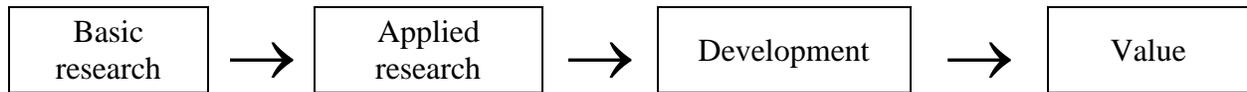
- ‘proactively working with other key social partners in the region and nationally (where appropriate) to support sustainable social and economic development;
- anticipating, elaborating, codifying and institutionalising the knowledge base of practice for the future as well as the present and in considering 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 (Moodie, 2008), and requires appropriately qualified teachers who engage in the scholarship of teaching and learning and in research on the way their field is changing;
- 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,
- developing qualifications that meet the needs of students, communities, local industries and regions’ (Wheelahan, 2018: 10).

For communities tertiary education institutions provide a depth and vitality of intellectual resources. For occupations tertiary education institutions codify, restructure, and systematise rules and procedures of practice to form systematic procedural knowledge (Moodie, Skolnik, Wheelahan, Liu, Simpson and Adam, in press). For industries tertiary education institutions provide a repository of renewing expertise and innovation. To fulfil these roles tertiary education institutions need continuing funding as institutions rather than separate payments for discrete programs, projects or other products by severable contracts or other arrangements (Wheelahan 2017, 2018: 18). This requires the development of communities of trust between institutions and their funders, communities, industries and students (Wheelahan 2017: 25-26; 2018: 16-18).

Similar to limitations of the linear model of innovation

Our approach to the limitations of human capital theory is similar to our view of the limitations of the linear model of innovation. The linear model posits a linear sequence of innovation from basic research to economic value depicted by Balconi, Brusoni and Orsenigo (2009: 5) as Basic research → Applied research → Development → Production → Marketing → Diffusion, which we simplify as Figure 2 to complement our depiction of human capital theory.

Figure 2: a simplified linear model of innovation



As has been well established this is not a complete account of innovation, which must take account of networks (David, Foray and Steinmueller, 1999; Orsenigo, Pammolli and Riccaboni, 2001; both cited in Balconi, Brusoni and Orsenigo, 2009) within systems of innovation (Kline and Rosenberg, 1986, cited in Balconi, Brusoni and Orsenigo, 2009: 10). Yet as Balconi, Brusoni and Orsenigo (2009) argue, aspects of the linear model of innovation retain explanatory value. For example, major technological developments have depended directly on major scientific advances, such as, in the 20th century, synthetic chemistry and continuous catalytic processes, solid state physics and transistors, and molecular biology and biotechnologies (Balconi, Brusoni and Orsenigo, 2009: 6). Conversely, the USA's war on cancer in the early 1970s failed to make substantial progress 'despite the enormous resources devoted to it, because there was no strong scientific understanding of cancer, its causes, and its evolution despite the enormous resources devoted to it' (Balconi, Brusoni and Orsenigo, 2009: 7).

Likewise, while we argue that human capital theory does not offer a full basis for tertiary education policy, we are not denying that tertiary education qualifications increase the productivity and economic value of individuals, groups, and economies. Rather, we argue for an alternative and better basis of tertiary education policy, human capability, to which we now turn.

Alternative: human capability

The economics Nobel laureate Amartya Sen (2000) and the philosopher Martha Nussbaum (2000) developed the capabilities approach to express goals for human development as an alternative to the goal of increasing economic output which remains the dominant development goal, or the goal of people having the same 'equal' access to resources and outcomes, which is sometimes posited as an alternative. Sen showed that human flourishing indicated by life expectancy and literacy rate are not correlated with per capita gross national product, though in some circumstances economic growth is needed to resource increases in human welfare. However, Sen argued that the goal should be human welfare, not increasing economic growth. Further, people need different economic resources to flourish: people in temperate climates need less heating and lighter clothes than people living in cold climates. Even within the same region, children, pregnant women and the aged need different amounts of food and health services to flourish. Neither is it desirable to state goals as people achieving the same outcomes. For example, while it is desirable for all young people to complete a secondary school certificate and go on to complete a postsecondary qualification, this by itself will not overcome inequality in the labour market or adverse outcomes for people who come from communities that experience racism.

Rather, Sen and Nussbaum argue that the goal should be for everyone to have the capability to be and do what they have reason to value (Sen, 2000: 18, 285; Nussbaum, 2000: 71, 78-80). This may be elaborated in many different ways. Nussbaum (2000: 78-80) proposed 10 central human functional capabilities:

1. Life.
2. Bodily health.
3. Bodily integrity.
4. Senses, imagination, and thought. Being able to use the senses, to imagine, think, and reason. . . .
5. Emotions. Being able to have attachments to things and people outside ourselves. . . .
6. Practical reason. Being able to form a conception of the good and to engage in critical reflection about the planning of one's life. (This entails protection for the liberty of conscience.)
7. Affiliation. Being able to live with and toward others. . .
8. Other species. Being able to live with concern for and in relation to animals, plants, and the world of nature.
9. Play. Being able to laugh, to play, to enjoy recreational activities.
10. Control over one's environment.

While Sen 'has never made a list of the central capabilities' (Nussbaum, 2000, 13), Sen (2000, xvi, 318-9 fn 41) provided technical help to the United Nations Development Program to develop its human development index, which is a summary measure of average achievement in three key dimensions of human development: a long and healthy life, being knowledgeable and have a decent standard of living. The health dimension is assessed by life expectancy at birth, the education dimension is measured by mean of years of schooling for adults aged 25 years and more, and expected years of schooling for children of school entering age. The standard of living dimension is measured by gross national income per capita which uses the logarithm of income to reflect the diminishing importance of income with increasing gross national income (Human Development Report Office, no date).

Education is clearly important to achieving human capability, however elaborated. An analysis of the implications of education as a whole for human capability would emphasise literacy and numeracy, and education for citizenship, as Sen and Nussbaum do. In Moodie, Wheelahan and Lavigne (accepted) we describe the implications of the capability approach to vocational education, which we argue is to develop productive capabilities. We argue that tertiary 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. These contribute to Nussbaum's central human functional capabilities for senses, imagination, and thought; practical reason; and control over one's environment. By developing each student as a citizen we refer to tertiary education's role in developing students' capacity to contribute to their community and to participate in the governance of their society. These contribute to Nussbaum's central human functional capabilities for affiliation and control over one's environment.

By developing each student as a worker we refer to tertiary education's role in developing students' capacity to be and do in work what they have reason to value. This contributes to Nussbaum's central human functional capabilities for senses, imagination, and thought; affiliation; control over one's environment; and it provides the resources necessary for life and health. We understand work broadly to be an activity which seeks to sustain an individual or society. This includes paid employment, voluntary work, and 'women's work', or 'self provisioning within the household' as Pahl (1984) calls it, and excludes recreation and leisure (Voss, 1967). As will become evident as we elaborate capabilities in work or productive capabilities, capabilities for human development 'are related to one another in many complex ways' (Nussbaum, 2000: 81).

Productive capabilities are distinguished from human capital, which is humans' augmentation of production for exchange (Sen, 2000: 293). Sen (2007: 99) explains:

At the risk of oversimplification, it can be said that the literature on human capital tends to concentrate on the agency of human beings in augmenting production possibilities. The perspective of human capability focuses, on the other hand, on the ability – the substantive freedom – of people to lead the lives they have reason to value and to enhance the real choices they have. The two perspectives cannot but be related, since both are concerned with the role of human beings, and in particular with the actual abilities that they achieve and acquire. But the yardstick of assessment concentrates on different achievements.

Productive capabilities are broader than '*productive* abilities' counted as human capital, because they recognise and include the freedom of the person doing the work (Sen, 2000: 295). For the same reason, they are also more than Standing's (2014: 966) 'capability power', which is a person's potential to engage in paid employment. Still less are productive capabilities just the employability skills or competencies said to be developed by universities that are sometimes called 'capabilities', as these are too narrowly defined and taught, and do not necessarily provide workers with options to flourish beyond the level of the credential (Moodie, Wheelahan and Lavigne, accepted).

Productive capabilities depend on peoples' agency in work, their freedom to choose what work they do and how they do it. Paid employment limits workers' scope for action, but nevertheless productive capabilities in employment include the capability to develop one's career, choose one's job, and the way one does one's tasks. Agency, therefore, includes personal development in work. Workers need the capability to respond to change and to change themselves for the better, including developing their knowledge, skills, and abilities to undertake different work (Moodie, Wheelahan and Lavigne, accepted).

The exercise of agency generally and productive capabilities in particular depend on informed reason. People need the knowledge and skill to choose the work they have reason to value, and to choose between options they consider. This includes the ability to think about new ideas, or the ability to 'think the unthinkable', as Wheelahan (2007: 637) expressed it, following Bernstein

(2000: 30). The capacity of informed reason is usually developed in formal education. Informed reason is analysed into knowledge, skill and ability in productive capabilities for employment, understood as a career and not merely as a job or, worse, a set of tasks (Moodie, Wheelahan and Lavigne, accepted).

Most work depends on society having numerous resources to support and foster the development of capabilities such as public health, formal education, near universal literacy and numeracy, means for transport and communication, means of collective decision making, means of collective action, and means of exchange of goods and services, sharing facilities and resources. In particular, social capacity includes a society's capacity to support and foster the capabilities of people who are disadvantaged in comparison with most others by, for example, having fewer resources, having less knowledge, skills or abilities, having less access to capacities, or suffering discrimination (Moodie, Wheelahan and Lavigne, accepted).

Productive capabilities depend crucially on the knowledge, skills and abilities of fellow workers; how they are organised; and fellow workers' agency. People need command over resources for most work. The nature and extent of the resources a worker needs depend very much on the work they choose. The form of a worker's command over the resources they need for their work has historically been associated with the form of their work – as an employee; as an independent practitioner or contractor; having an informal, contingent or precarious attachment to the formal economy; or working in the informal economy (Moodie, Wheelahan and Lavigne, accepted).

Most work depends on institutions such as the family, schooling, trade, money, employment, banking, social security, and retirement. Most workers further rely on organisations to work, such as schools, telecommunication companies, and banks. This capability includes the freedom to organise to serve collective interests. Employment depends on employers, employers' associations, trade unions, unions' associations, and other organisations of collective action (Moodie, Wheelahan and Lavigne, accepted).

Much of the shallowest discussion of workers' productivity assume that graduates' success in work and workers' productivity depend mainly on individual workers' knowledge, skill and abilities. This ignores the foregoing argument that work is largely constructed by the society, institutions and organisations within which it is done. In particular, productive capabilities result from the interaction of three aspects of work:

- 1 the goods and/or services that the workplace reasonably seeks to produce;
- 2 the resources of the workplace, which includes all workers' knowledge, skills and abilities; and
- 3 the way the workplace's resources are organised (Moodie, Wheelahan and Lavigne, accepted).

Each factor affects the others. For example, it might be reasonable for a workplace to seek to produce a high volume of moderate quality goods and/or services or a low volume of high quality goods and/or services. A workplace may be highly automated and employ relatively few highly skilled workers or it may produce the same outputs with less automation and more lower skilled workers. Further, a workplace may be organised into functional units of output A, output B, output C and a head office or it may be organised into head office and major client group I, major client group II, and major client group III (Moodie, Wheelahan and Lavigne, accepted).

A worker's productive capabilities in employment therefore depends on the outputs their workplace seeks to produce; the workplace's resources including its capital, plant and other resources including the knowledge, skills and abilities of any other workers; and on how the workplace is organised. Changes in those factors of production do not change a worker's own knowledge, skills, or abilities, but they change how fully they may be leveraged. A worker's productive capabilities are therefore to be understood not only in relation to the social system that supports and fosters them, but also with in relation to workplace resources and arrangements (Moodie, Wheelahan and Lavigne, accepted).

Implications for tertiary education

Tertiary education's institutional role in developing communities, occupations, and industries described earlier; and tertiary education institutions' roles in developing students as humans, citizens, and as workers, have several implications. This is a normative framework; a statement of ideals against which tertiary education systems may be evaluated. We do not expect all systems to have all characteristics fully. We propose these elements as suitable for evaluating tertiary education in different contexts, with different resources, and supporting different economies and (Moodie, Wheelahan and Lavigne, accepted). These elements are divided into two categories: the first refers to the aims or purposes of tertiary education. While there are some commonalities with Nussbaum's list of human capabilities, it emphasises the *capabilities* or *processes* of education rather than specific outcomes of education. The second list of elements refers to the enabling institutional frameworks that are needed to support the development of capability.

Aims or purposes of education

- 1 *Promote agency.* Tertiary education should enable students to exercise freedom in choosing who to be and what they do that they have reason to value, and how they do it. This includes developing students' capability to respond to change, to change themselves for the better, and to develop themselves over their life.
- 2 *Develop reason.* Tertiary education should promote Nussbaum's 'practical reason' and what we call 'informed reason', the ability to do the things they have reason to value, and to choose between options they consider. This includes developing the theoretical knowledge, skill, and ability for a career developed over a lifetime. It includes the ability to think new ideas, or the ability to 'think the unthinkable'.
- 3 *Cultivate culture.* Tertiary education should develop students' capacity to appreciate and contribute to human culture, which we understand broadly to include our artistic, humanist, scientific, technological, material, and spiritual culture.
- 4 *Engender shared responsibility.* Tertiary education should develop students' capacity to take responsibility beyond their individual selves to their family, group including work group, community and society.

5 *Common capacity.* Tertiary education should develop at least some of the common capacities upon which capabilities depend. This includes developing students' capacity to organise themselves; to contribute to the organisation of their family, group, and community; and to collaborate with others. This is degraded as 'teamwork' in many tertiary education programs.

All tertiary education should also contribute to the special common capacity of ensuring the capabilities of people who are disadvantaged in comparison with most others by, for example, having fewer resources; having less knowledge, skills or abilities than others; or who have suffered discrimination.

Enabling institutional framework

6 *Be supported by appropriate resources.* Students' capability depends on access to resources to support their tertiary education, which must in turn be resourced appropriately. This includes teachers who are adequately educated and who have adequate time to develop, present and evaluate their education; and adequate equipment, space and other resources for their tertiary education. Tertiary education also depends on the capacity to extend and renew knowledge as research broadly conceived.

7 *Become institutionalised.* Tertiary education should become as institutionalised as schools, colleges and universities, in the 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 (Streeck and Thelen, 2005: 9, 12). This is not so much of an issue for schools and universities which are generally firmly institutionalised, but it is an issue for vocational colleges whose ideal or model is less well described, understood and accepted.

8 *Have strong organisations.* Strong tertiary education cannot be fostered without strong tertiary education organisations, typically colleges, apprenticeship bodies and universities which have stable, secure and long-term form and funding. These in turn need strong organisations to coordinate collective effort, such as associations of colleges, unions, occupational associations, professional bodies, and employer bodies.

9 *Prepare graduates for personal, educational and occupational advancement.* Tertiary education should prepare graduates for advancement within their occupation and in their education over their whole career. This includes the capacity for graduates to develop in different contexts.

This states the desirable characteristics of tertiary education for society as a whole. These may be elaborated for communities, occupations, industries, and others with an interest in tertiary education. Here we consider just tertiary education's benefits for students, which extend beyond ensuring students have 'employability' skills. Schröder (2015) distinguishes between employability and capability in considering the aims of vocational education in supporting disenfranchised young people in Europe. She argues that three categories of capabilities support young people to make real choices in their lives:

- capability for *education*, which refers to ‘the real freedom to choose a training program or a curriculum one has reason to value’;
- capability for *work*, which refers to ‘the real freedom of making the choice to undertake the job or activity one has reason to value’; and
- capability for *voice*, which refers to ‘the real freedom to express one’s wishes, expectations, desires etc. and make them count when decisions concerning oneself are made’ (Schröer, 2015: 369).

These are implications for tertiary education as a whole, some of which are the responsibility of institutions individually or collectively, and some of which are shared with governments. These may be analysed for each part of tertiary education. Here we describe implications just for programs of study. We posit three roles of all tertiary education qualifications, although the emphasis on each role may differ with each qualification (Gallacher, 2011: 2-3; Gallacher, Ingram and Reeve, 2012: 383; Moodie, Fredman, Bexley and Wheelahan, 2013 :30).

- 1 *Labour market*. Qualifications provide entry to and progression in the workforce.
- 2 *Education system*. All 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 *In society*. Qualifications contribute to society by developing students’ appreciation of and contribution to culture and society. They assist individuals in supporting their families, communities and occupations. Qualifications also contribute to social inclusion by supporting inclusion in education and the labour market and by contributing to a more tolerant and inclusive society.

While the human capability approach has implications has broad implications for considering the purpose of qualifications and the role of tertiary education institutions, we now consider the implications of this approach to a specific issue in tertiary education, transfer between vocational and higher education. The capacity for students to transfer between different types of qualifications directly relates to the second purpose of qualifications above, but it also has implications for the extent to which qualifications can serve the first and third purpose as well. Access to lifelong learning underpins students’ agency in the labour market, but also in society more broadly.

Transfer between vocational and higher education

We start by putting inter sectoral transfer in the context of the nature of Australian vocational education and training and the organisation of vocational and higher education. We then note reverse transfer and swirling, before considering upward transfer in greater depth.

Australian vocational education and training

Australian vocational education and training is distinctive in including in the same sector programs of one and two years' duration ('vocational education') and short courses of a few days or weeks ('training'). This is in contrast to the USA and Canada, for example, where short cycle 'collegiate' education of two years' duration is offered by colleges which are overwhelmingly public, and where career and technical education which is much shorter and is offered by mostly private for profit trainers. Typically in North America collegiate education is mostly financed by the public and is included in higher or postsecondary education policies, financing and quality assurance arrangements which also include four-year or university education. Career and technical education is mostly financed privately and is covered by different regulations and quality assurance. The sharp distinction between collegiate and career and technical education in the USA is illustrated in Table 3.

Table 3: percentage of enrolments in degree granting and non degree granting postsecondary institutions by control and level of institution, USA, fall 2014

Level of institution	Public	Private not for profit	Private for profit	Total
4 year	61	29	9	99
2 year	94	5	1	100
Less than 2 year	16	3	81	100

Source: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), Spring 2014, Human Resources component; Spring 2015, Fall Enrollment component; and Fall 2014, Completions component. (This table was prepared April 2016.)

In contrast, in Australia vocational education and training are not distinguished within one integrated sector which has mostly uniform policy, legislation, financing, and quality assurance. This has greatly compromised vocational education. The low requirements for resourcing, capital and capacity which may be appropriate for small training organisations are also applied to TAFE. The mostly transactional quality assurance applied to training is also applied, most inappropriately, to vocational education. Since around 2000 Australian governments have applied the principle of competitive neutrality to both vocational education and training, and to both TAFE and private for profit providers. This posits vocational education and training as fungible and changeable services for which providers are interchangeable. This undermines the broader and long term institutional role which we earlier argued tertiary education institutions have in developing multiple capacities in their communities, occupations and industries.

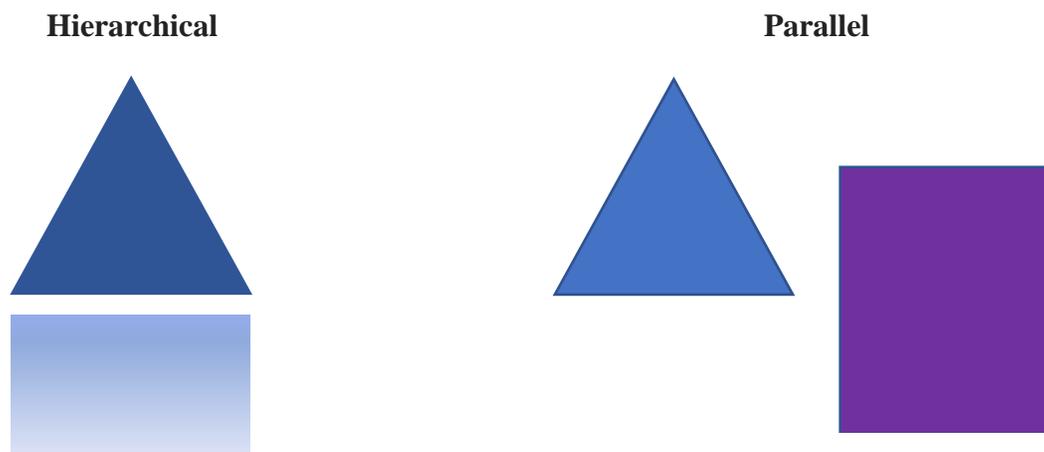
Vertical and parallel sectors of tertiary education

Skolnik (2016) observed that while USA states and some Canadian provinces such as British Columbia organise their colleges and universities in a hierarchical relationship with colleges preparing students in lower level programs for transfer to higher level programs offered by universities, many continental European countries organise their colleges and universities in a parallel relationship with the occupational sector offering programs up to masters level. This is illustrated stylistically in Figure 3.

In both arrangements the university sector is shown as a triangle since university systems tend to be organised hierarchically, and the vocational education sector is shown as a rectangle. The triangle and rectangle may be of different sizes relative to each other, reflecting the different relative sizes of the university and vocational sectors. In hierarchical systems the triangle and rectangle may be further or closer apart, according to how close the academic and vocational sectors are in these systems. In some jurisdictions the vocational sector offers the baccalaureate, the typical qualification of the university sector, which may be depicted by the rectangle superimposed over the bottom of the triangle.

The parallel systems are shown with the vocational sector offering programs up to and including masters. The university and vocational sectors are shaded different colours, reflecting the different academic and vocational orientations of the sectors, at least in principle, and the incommensurability of their systems.

Figure 3: hierarchical and parallel organization of tertiary education sectors



Australian vocational and higher education have very different governance, financing, curriculums, assessment and quality assurance, as if they were like the parallel systems of continental Europe. However, public policy expects strong transfer and particularly upward transfer between vocational and higher education, as if they were like the vertical systems of the USA.

This tension in Australian tertiary education policy could be resolved by reducing the differences between vocational and higher education to be more like the USA vertical arrangement, and this is the current direction of tertiary education policy. An alternative would be to preserve and perhaps even increase the differences between vocational and higher education, but offer vocational education students and their related occupations the potential to transfer upwards within the vocational sector to be more like the parallel European systems.

Reverse transfer and swirling

Some champions of vocational education stress the significance of reverse transfer, implying that graduates of ‘useless’ university programs transfer to more vocationally relevant and therefore useful vocational programs. The data aren’t good, but taking into account several factors, the fairest conclusion is that reverse transfer is from 50% less to 50% more than upward transfer depending on the concept and measure of transfer used (Moodie, 2005: 37).

As other analysts have observed, the metaphors of both upward and reverse transfer posit a linear progression from one program, institution or sector to another. However, institutional studies show that at least some students have studied in multiple programs, institutions or sectors, usually not following a ‘pathway’ defined by institutions, and sometimes with multiple enrolments concurrently. This suggests that the better metaphor is of ‘swirling’ (de los Santos and Wright, 1990: 32) or ‘shuffling’ the deck of study options (Maxwell and colleagues, 2002: 1). The national data for Australian tertiary education currently disguises multiple enrolments, though this could be reported if vocational and higher education used the same universal student identifier.

Upward transfer

Notwithstanding the conceptual importance of swirling, upward transfer should remain important to tertiary education policy because students from disadvantaged groups who are more represented in lower level programs should have strong opportunities to transfer to higher level programs where they are badly under represented. This social justice principle applies to all levels of tertiary education, not just transfer from vocational to higher education. For while members of equity groups are more represented in lower level vocational education programs of certificates 1, 2 and 3, qualifications which have rather poorer outcomes than higher level vocational qualifications, they are hardly better represented in higher vocational education programs of certificate 4 and above than they are in baccalaureate programs.

Table 4 shows socio economic status groups’ shares of enrolments in each vocational education qualification level. For this analysis the total population is divided into 5 quintiles by education and occupation status, with 1 being the lowest status and 5 the highest status. So each status level’s share of enrolments would reflect their share of population if they were 20%. We note that the lowest quintile 1 has 23% of all vocational education enrolments, somewhat over parity. However, quintile 1’s shares of certificate IV and higher qualifications are rather below parity, and its shares of certificates III and lower qualifications are rather over parity. Conversely, the highest quintile 5 shares of all vocational education enrolments is 13.6%, much below parity of 20% since most quintile 5 and quintile 4 students enrol in higher education. But quintile 5’s shares of certificates IV and above is rather higher than its shares of lower qualifications. This enrolment pattern is stable, being consistent with Foley’s (2007) findings for 2001.

Table 4: Socio economic groups' share of each vocational education qualification level, 2017

Qualification level	Quintile 1 = lowest 5= highest					Total
	1	2	3	4	5	
Diploma and higher	18.2	21.5	23.0	19.2	17.1	100%
Certificate IV	19.1	22.3	23.0	18.8	15.9	100%
Certificate III	23.9	23.8	22.9	17.2	11.4	100%
Certificate II	27.8	23.4	21.0	14.7	12.2	100%
Certificate I	28.0	22.2	19.0	14.7	14.3	100%
Non AQF qualification	21.7	23.4	19.0	16.7	18.5	100%
Total	23.0	23.1	22.2	17.2	13.6	100%
Parity	20.0	20.0	20.0	20.0	20.0	100%

Source: NCVET Vocstats VET students 2003-2017 highest current qualification level by year and SEIFA (IEO)

Next we note that while 13.9% of all students enrol in diplomas or higher, only 5.3% of Indigenous Australian students, 10.2% of students with a disability, and 7.7% of students from rural or remote localities enrol in higher level vocational qualifications. Conversely, while 16.7% of all students enrol in certificates II, some 28.0% of Indigenous Australian students, 21.0% of students with a disability, and 21.6% of students from rural or remote localities enrol in certificates II (Table 5).

Table 5: distribution of equity group and all students by qualification level, 2011

Qualification level	Indigenous	Disability	Rural/ remote localities	Non-English speaking background	Older	All students
Diploma or higher	5.3	10.2	7.7	18.6	13.8	13.9
Certificate IV	9.9	12.8	13.1	15.3	20.1	16.3
Certificate III	28.4	27.2	34.4	27.0	22.6	32.3
Certificate II	28.0	21.0	21.6	14.0	11.0	16.7
Certificate I	13.5	9.7	6.0	7.2	4.6	4.5
AQF sub-total	85.0	81.0	82.8	82.0	72.2	83.7
Non-AQF sub-total	15.0	19.0	17.2	18.0	27.8	16.3
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: adapted from Griffin (2014: 9) Table 1 Number of students by qualification level, equity groups 2011 (%)

We observe a similar equity gradient in higher education enrolments. From Table 6 we note that postgraduate programs have a higher share than undergraduate programs of students from non English speaking backgrounds, Indigenous Australians, and remote students. However, all other equity groups are less well represented in postgraduate programs than undergraduate programs.

Table 6: equity groups' shares of undergraduate and postgraduate enrolments, 2016

Equity group	Undergraduate	Postgraduate
Students from a non English speaking background	4.2%	4.8%
Students with a disability	5.8%	4.9%
Women in non-traditional area	16.6%	10.6%
Indigenous	2.0%	2.2%
First address low SES by SA1	17.4%	15.4%
First address regional (2011 ASGS)	22.2%	20.2%
First address remote (2011 ASGS)	0.9%	1.2%

Source: derived from Australian Government Department of Education and Training (2017) Table 2.1: commencing and all domestic students by equity group, 2001 to 2016 and Table 2.1: commencing and all domestic students by equity group, 2001 to 2016.

Table 7 shows the number of domestic undergraduate students admitted to universities in 2016 and the proportion admitted on the basis of vocational education, by broad field of education. We note that Australian universities have probably increased the proportion of students they admit to undergraduate programs on the basis of prior vocational education study, to 12% in 2016.

We note considerable differences in transfer rates between broad fields of study, from 4.9% in the natural and physical sciences to 19% in education. Some of these differences are due to the structure of the sectors: natural and physical sciences are only 1% of enrolments in vocational education of certificate 4 and above, and so do not graduate many students to transfer to higher education. Other differences are probably shaped more by the structure of occupations. Not shown in Table 7 is that nursing, a narrow field within the broad field of health, admitted 22% of its students on the basis of vocational education in 2008. We found similarly in Canada that university nursing programs admit an unusually high proportion of transfer students, which we suggest is due to the close interaction of vocational and higher education nursing graduates in the workplace. It is also quite possible that the high percentage of students admitted on the basis of prior studies in vocational education to the education field of study is explained by vocational education graduates with prior qualifications in childcare upgrading to early childhood education teaching qualifications.

Table 7: number of commencing undergraduate students and proportion admitted on the basis of vocational education by broad field of study, universities 2016, all higher education 2008

Broad field	Number of commencing undergraduates, 2016 unis	% admitted on basis of vocational education	
		2008 all	2016 unis
Natural and physical sciences	27,635	3.5	4.9
Information technology	8,132	12.0	15.6
Engineering and related technologies	14,864	6.1	8.4
Architecture and building	6,426	11.0	11.9
Agriculture, environmental and related studies	3,357	8.0	11.0
Health	53,268	10.9	14.4
Education	23,096	13.2	19.1
Management and commerce	38,988	11.6	12.6
Society and culture	63,494	7.1	11.2
Creative arts	20,192	7.0	9.7
Food, hospitality and personal services	0	6.9	0
Mixed field programs	0	0.3	0
All	259,452	9.0	12.0

Sources: Universities Australia national student enrolments aggregated: 2015 – 2016, Moodie (2012a: 11-12) table 2.

We now examine upward student transfer by university (Table 8). The new generation of universities are the universities that were established as universities after 1988; the private Bond University and Notre Dame Australia were established as universities from their foundation; the other new generation universities were formed from colleges of advanced education, some of which were established in the late 19th century. Victoria University has consistently admitted a high proportion of transfer students; it is a dual sector university with substantial enrolments in both vocational and higher education and so should admit a high proportion of transfer students. The two private universities have consistently admitted low proportions of transfer students; this is consistent with USA private not for profit universities, which also admit low proportions of transfer students.

The regional universities are mostly based in centres with a population of less than 250,000. Charles Sturt University has long cultivated strong relations with the TAFE institutes in its region and accordingly has the highest transfer rate of Australian universities. The University of Tasmania has increased its proportion of transfer students by more than the national average but by less than the average for regional universities. It is probably not helped by the instability of TasTAFE over the last decade.

The technical universities were institutes of technology for most of their histories; most were members of the directors of central institutes of technology in the 1970s and are currently members of the Australian Technology Network. Swinburne University is included in this group because of its similar antecedents and orientation. Swinburne and RMIT are dual sector

universities. Curtin has an unusually low proportion of transfer students, lower even than some Group of 8 universities.

The 1960s-1970s universities were established from the mid 1960s to the mid 1970s. La Trobe, Wollongong and Macquarie universities share regions with sizeable TAFE institutes but admit modest proportions of transfer students, and unlike most other universities, lower proportions than they admitted in 2008.

The Group of 8 are Australia's elite universities, which consistently admit tiny proportions of transfer students.

Table 8: number of commencing undergraduate students and proportion admitted on the basis of vocational education by university and university group, 2008 and 2016,

University/group	Number of commencing undergraduates, 2016	% admitted on basis of vocational education	
		2008	2016
Victoria University	6,236	24	25.8%
Western Sydney University	12,461	16	21.4%
University of Canberra	3,997	11	19.5%
Edith Cowan University	5,830	12	16.4%
Australian Catholic University	8,439	16	14.2%
Bond University	973	3	4.9%
University of Notre Dame Australia	2,448	7	4.3%
New generation universities	40,384	13	18.2%
Charles Sturt University	4,631	22	34.4%
Southern Cross University	2,272	11	23.1%
University of Southern Queensland	7,765	8	21.4%
The University of New England	4,154	13	19.7%
University of the Sunshine Coast	3,756	4	18.4%
Central Queensland University	5,090	7	17.4%
Charles Darwin University	3,614	13	15.4%
James Cook University	5,238	5	13.4%
Federation University	12,741	8	12.1%
University of Tasmania	3,761	0	6.7%
Regional universities	53,022	9	17.7%
Swinburne University of Technology	2,374	27	24.8%
RMIT University	1,825	21	18.9%
Queensland University of Technology	1,214	7	11.0%
University of South Australia	647	9	9.7%
University of Technology Sydney	562	12	7.6%
Curtin University	156	6	1.7%

University/group	Number of commencing undergraduates, 2016	% admitted on basis of vocational education	
		2008	2016
Technical universities	6,778	14	12.6%
Murdoch University	3,230	13	16.9%
Griffith University	10,295	8	14.9%
Deakin University	10,976	13	13.5%
Flinders University	4,757	8	10.0%
The University of Newcastle	6,551	7	9.8%
La Trobe University	8,418	13	8.5%
University of Wollongong	5,664	13	7.6%
Macquarie University	8,885	6	4.5%
1960s-1970s universities	58,776	10	10.6%
Monash University	9,208	7	4.9%
The University of Queensland	8,441	2	3.5%
The University of Adelaide	5,079	1	2.6%
The University of Melbourne	6,644	2	2.5%
The University of New South Wales	8,960	3	2.1%
The University of Western Australia	3,992	0	1.0%
The University of Sydney	8,219	1	0.7%
The Australian National University	3,062	1	0.6%
Group of 8	53,605	2	2.5%
All	259,452	9.0	12.0

Sources: Universities Australia national student enrolments aggregated: 2015 – 2016, Moodie (2012b: 153-154) table 6.

What is the 'right' proportion of upward transfer?

On one analysis the best transfer rate is 0. If all students were admitted to the program that was right for them initially and if their sector provided needed continuing education there should be no need to transfer between sectors. Transfer rates are affected by the organisation of tertiary education, as we discussed earlier. They are also affected by the respective sizes of the vocational and higher education sectors. Jurisdictions which have around two-thirds of their students enrolled in colleges such as Australia and California are likely to have a higher demand for upward transfer than jurisdictions which have two-thirds of their students enrolled in universities, such as Canada and Colorado (Table 9).

Table 9: proportions of students enrolled in colleges and universities in selected jurisdictions, 2006

Jurisdiction	% enrolled in colleges	% enrolled in universities
Australia	65	35
Canada	37	63
UK	56	44
USA	39	61
California	67	33
Colorado	38	62
Texas	54	46

Source: Moodie (2008: 45, 60, 63, 66).

One indicator of the success of upward transfer in providing upward mobility is the transfer student admission ratio (Moodie, 2007). In Table 8 we noted that the elite Group of 8 universities admitted 2.5% of their students on the basis of a vocational education qualification. The total for all universities was 12%, but if we exclude the Go8 the non Go8 universities admitted 14.4% of their students on the basis of vocational education. The ratio of 2.5 to 14.4 is 1:5.8. I did similar calculations for Australia and some other jurisdictions in 2000 to find the transfer student admission ratios shown in Table 10. We note that not only did Australia have one of the most inequitable transfer student admission ratios in 2000, but that it has deteriorated substantially since then.

Table 10: ratio of transfer student admission rates of highly selective and moderately selective four-year institutions, selected jurisdictions, 2000

Jurisdiction	Highly selective institutions	Moderately selective institutions	Ratio of highly selective to moderately selective
Scotland	5%	24%	1:5
Australia	2%	8%	1:4
California	6.5%	13%	1:2
Colorado	3%	6%	1:2
Texas	15%	26%	1:1.7

Source: Moodie (2007: 857) table 10.

Conclusion and implications

We have observed considerable variations in transfer between vocational and higher education by field of study, institution and institution type. Some of the variations by field are due to the structure of the sectors: natural and physical sciences is a tiny field in vocational education and so graduates few students who may want to transfer to higher education in the same broad field. We have argued that other variations in transfer by field are related as much by the structuring of occupations and the relations between occupations in the same broad field as they may be to the relations between occupations. As with the match between education and work, transfer between

vocational and higher education needs to take account of the demand from work as much as the supply from education.

We have also observed considerable variation in transfer between vocational and higher education by institution and by institution type. Some of this will be due to institutions' mix of disciplines, location, and internal structure. But most seems to be due to institutions' selectivity and admissions policy. At least in principle, universities such as Melbourne and Western Australia which have adopted the elite USA model of general undergraduate programs leading to occupationally specific graduate programs are better placed to admit higher proportions of transfer students, as elite USA universities do. But Melbourne and UWA admit no higher proportions of transfer students than the mean for all elite Australian universities.

While there may be no objectively correct level of student transfer, we believe there are strong normative grounds for increasing the proportion of transfer students at the elite universities to at least match the national average.

While transfer between the sectors is important to analyse because the major curriculum, assessment, quality assurance and structural differences between the sectors, for equity it is just as important to examine transfer between levels of qualifications within the sectors. We reported that while members of equity groups are better represented in lower level vocational education qualifications, they are poorly under-represented in higher level vocational qualifications. We believe that it would be at least worthwhile comparing equity group representation in undergraduate programs with their representation in postgraduate programs. While this would have to take account of several salient differences between undergraduate and postgraduate programs, we expect there would be sufficient comparable cases available to make informative comparisons.

The human capability approach offers a framework for evaluating student transfer policies and outcomes, as it does other tertiary education policies and outcomes. If tertiary education is to support capability for voice, education and work, a much more nuanced analysis is needed. For example, an analysis of pathways within and between sectors would require a quantitative analysis of pathways by equity group and a qualitative analysis to explore the extent to which pathways are enabling students to make real choices about their lives, and whether pathways are structured to support student transitions. The three purposes of qualifications offers a framework for evaluating qualifications and pathways more broadly on the extent to which they support labour market access and progression, further study, and social inclusion.

Our argument about student transfer may be based on any standard equity ground. However, we have also argued for strong institutional roles for tertiary education institutions for their communities, occupations and industries. We found that human capital is an inadequate ground to found these important institutional roles, and have based them on human capability: tertiary education's role in developing peoples' capability to be and do what they have reason to value.

16 August 2018

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