



On Intellectual Independence: The Principal Aim of Universities in New Zealand

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Abstract

New Zealand's Education and Training Act (Education and Training Act 2020 establishment of institutions, <https://www.legislation.govt.nz/act/public/2020/0038/latest/LMS202213.html>, 2020) confirms that the principal aim of universities is to develop intellectual independence. The act does not stipulate what intellectual independence is or how universities are to develop it. This article explores what intellectual independence might mean in the context of student learning in New Zealand, and what is known about how it could be developed and about how university teachers might confirm that they are developing it. The article provides a conceptual commentary and a model of intellectual independence, designed to encourage debate on this important and pressing higher-education policy issue. The model proposes that intellectual independence is the consequence of students learning the skills and dispositions to think critically, as an independent guide to their own beliefs and actions, and that the Education Act provides a challenge to higher education to contribute positively to the further development of an intellectually-independent critical citizenry.

Keywords Intellectual independence · Critical thinking skills and dispositions · Universal intellectual values · Roles and responsibilities of universities

Introduction

New Zealand's Education and Training Act (2020) provides a broad description of the roles and responsibilities of New Zealand's universities and how they might operate, but stipulates that their principal aim should be to develop intellectual independence (Sect. 268, 2, d, I, a. New Zealand Legislation, 2020. The same stipulation appeared in the 1989 Education Act). The acts do not specify what intellectual independence is or how universities are to develop it and indeed these matters have been

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debated in the international education literature for more than a century (Oliver and Nichols, 2001). One academic definition in the context of intellectual independence as an educational goal is “To be intellectually independent is to assess, on one’s own, the soundness of the justification proposed for a knowledge claim.” (Aikenhead, 1990, p. 132) although in more common usage, intellectually-independent people choose to think for themselves. An important aspect of intellectual independence as an educational objective is that simply knowing about intellectual independence or how to be intellectually independent cannot be a satisfactory conclusion to its development. Intellectually-independent people may be intellectually independent to different degrees, but intellectual independence manifests itself as thought processes that people are able and willing to perform.

The Act may suggest that higher education teachers can teach all manner of things to their students, but what they do teach, in addition to whatever they think may be necessary to develop their students’ intellectual independence, should not get in the way of achieving the principal aim of ensuring that graduates from universities are, at least to a degree, able and willing to think for themselves, rather than feeling obliged to think as directed by others, or more limited in their capacity to think independently than they were when they started learning at university. And, given that this is *the* principal aim, rather than a secondary aim or just one of several important aims, this interpretation suggests the principled necessity of evaluating, assessing, monitoring, measuring or in some way researching the accomplishment of this aim, rather than simply anticipating that, in amongst all of the other things sought and accomplished by universities, somehow intellectual independence will appear.

This article explores possible meanings of intellectual independence in the context of student learning in New Zealand. The article analyses what might be fundamental limitations to the achievement of intellectual independence, limitations that result from other objectives being prioritised, and concerns about situating intellectual independence as the sector’s principal aim in New Zealand in the twenty-first century. The analysis goes on to imagine one particular interpretation of intellectual independence, based on the application of critical thinking dispositions and skills as a guide to individual beliefs and actions, and describes what is known about how to develop and assess these in higher education, and what remains to be researched. In doing so, the article attempts a critical review of this educational aim and its underlying educational theories, drawing on New Zealand and international literature, and provides a conceptual commentary designed to encourage debate on this important and pressing higher-education policy issue.

What the University Sector in New Zealand Says About Intellectual Independence

The representative body of universities in New Zealand highlights pursuit of intellectual independence as a feature that potentially distinguishes universities from other parts of the tertiary sector (Universities NZ, 2021; although notably the Education and Training Act itself allows that other institutions might also develop intellectual

independence, a position encouraged by a working group on post compulsory education that advised the New Zealand Government's Cabinet Social Equity Committee in 1988; Hawke, 1988). The University of Auckland includes its commitment to intellectual independence in its 'about us' statement (University of Auckland, 2021), and the University of Otago identifies its mission to (amongst other things), "*create, advance, preserve, promote and apply intellectual independence ...*" (University of Otago, 2021a, 2021b, p. 129). Perhaps most telling that intellectual independence is taken seriously by those who legislate for and manage the sector, is that one tertiary institution was denied university status on the basis that it did not adequately develop intellectual independence (amongst other things, as reported by the Association of University Staff, 2005).

Towards a Working Definition of Intellectual Independence in the Context of the Principal Aim of Universities in New Zealand

The term intellectual independence may not be used as prominently elsewhere as it is in New Zealand's education acts, and internationally perhaps it has diverse meanings that should be addressed. On occasions its use refers to what in some fields of enquiry would be understood as an aspect of student-centred teaching as opposed to teacher-centred teaching (see for example Arsic, 2014, and O'Neill & McMahon, 2005 for a broader analysis of student-centredness) and so emphasising the independence of students from their teachers as they learn, the lack of direct dependence on their teachers on what and how they learn, and their ongoing ability to be responsible for their own learning (as in lifelong learning; see for example Ministry of Education, 2015). The focus in this context is primarily on the process of learning rather than on the product of learning (and both student-centeredness and lifelong learning will be addressed later in this article, in the context of developing intellectual independence). The term has also been used in discourses on the roles of intellectuals in societies, and in particular on their need to be sufficiently independent, and supported by and within societies, for their roles to be accomplished (see for example, Held, 1983). There are strong links here to the concept of academic freedom. But overall, and certainly in the context of this article, these uses of 'intellectual independence' do not in themselves fully equate to the principled positioning of developing intellectual independence in New Zealand's education acts.

New Zealand's own seminal work on the roles and responsibilities of universities (Malcolm & Tarling, 2007) does not elaborate on intellectual independence. It does comment extensively on key components of 'the idea of a university' and seeks to reassert principles that should underpin university functioning. Most notably in the current context, these authors affirm that;

A university's primary focus must be to support and enhance the depth and quality of thinking by all who share in its academic life, and those in the wider communities to which it relates. The life of the mind is critical to the quality of human experience, both for individual persons and societies in their various modes and forms. ... In fidelity to this principle a university will be a

means by which individuals having access to its activities can gain not only immediate skills and understanding to support them in life's opportunities, responsibilities and enrichment, but also the intellectual capacity to maintain a continuing participation in the growth of human knowledge as it deepens and extends human understanding (p. 224)

Malcolm & Tarling's analysis does clearly identify some components of thinking that, from their perspective, are consequential to a university's primary focus and a corollary to this thinking being deep and of high quality and for specific purposes; but perhaps the focus here is more on the capacity for these purposes, than on the independence that needs to be explored.

Scriven and Paul thought a lot about thinking in the last century. In 1987 they proposed the existence of a number of universal intellectual values that could, perhaps should, underpin thinking and the teaching of thinking (Scriven & Paul, 1987). Their proposal was built on extended analyses of the concept of values in the context of education (see for example, Scriven, 1966), with particular reference to critical thinking and what might guide the beliefs and actions of individuals;

Critical thinking is the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action. In its exemplary form, it is based on universal intellectual values that transcend subject matter divisions: clarity, accuracy, precision, consistency, relevance, sound evidence, good reasons, depth, breadth, and fairness (Scriven & Paul, 1987, np)

The second half of the twentieth century was particularly important for higher education's exploration of thinking and its roles in teaching thinking to university students. Notably there is much in common between the thinking processes (*conceptualizing, applying, analyzing, synthesizing, and/or evaluating*) described by Scriven & Paul and the elements of cognitive learning described earlier that century by Bloom and colleagues (Bloom, 1956). Similarly Scriven and Paul's list of where information was to be gathered from or generated by (*observation, experience, reflection, reasoning, or communication*) is consistent with the developing interest in the 80s of combinations of experience, reflection and cognition. Kolb's experiential learning theory, for example, was published in 1984 (Kolb, 1984). And in 1991, Mezirow emphasised that combinations of experience, reflection and critical thinking are necessary to help adults "*discover a need to acquire new perspectives in order to gain a more complete understanding of changing events.*" (Mezirow, 1991, p. 3), giving rise to educational pursuits such as 'perspective transformation' that may combine strict cognitive development with affective, values-based educational aspirations. Of course, somewhat earlier, Bloom's cognitive hierarchy was joined by an affective equivalent focussed on learning, and thinking, in the affective domain (Krathwohl et al., 1964). Also in the 1980s, another group of interested academics was discussing the details of critical thinking to create a 'statement of expert consensus'. Facione summarised the thinking of this expert group (Facione, 1990)

to describe what skills critical thinking comprises. Within this framework, Facione and the expert panel developed an equally important and much longer list of affective dispositions that underpin these cognitive manifestations of critical thinking, in two sections involving ‘Approaches to life and living in general’ and ‘Approaches to specific issues, questions or problems’. Notably, Facioni’s dispositions to critical thinking have elements in common with Scriven and Paul’s ‘universal intellectual values’. ‘Fairness’ was reconceptualised as being ‘fair-minded in appraising reasoning’; ‘sound evidence’ was greatly expanded to include, as examples, ‘diligence in seeking relevant information’, ‘persistence though difficulties are encountered’ and ‘willingness to reconsider and revise views where honest reflection suggests that change is warranted’.

That critical thinking is complex is clear. That it may comprise combinations of cognitive and affective attributes almost beyond contestation. That it belongs conceptually to more than one philosophical tradition has been strongly argued by, for example, Brookfield (2012). Brookfield identifies analytic philosophy and logic, hypothetico- deductive method, pragmatism, psychoanalysis and critical theory as contributory and suggests that all five traditions have elements in common, none are mutually exclusive, and indeed may work best when they interact. Arguably critical theory has the most particular and distinctive contribution to interests in intellectual independence, people choosing to think for themselves, and the relationship between thinking, actions and beliefs. Brookfield suggests that “*The whole point of critical thinking is to take informed action*” (Brookfield, 2012, p. 12) and there are strong conceptual links here to Scriven and Paul’s (1987) highlighting of critical thinking as a “*guide to beliefs and actions*” (1987, np) emphasising that the behavioural product of critical thinking cannot be prescribed but arises or is guided from within, as a consequence of the cognitive and affective efforts of the thinker. More recently critical theorists have expanded these ideas to make links between critical-thinking, critical-self and critical-being and to consider the nature of a university curriculum in these contexts. As described by Barnett (2015);

Unless we are able to supply an account of how these different critical tasks can be held together, the danger looms that we might produce students who are adept at critically evaluating, say, literary texts or other works of humanistic culture in one way, but who adopt quite different powers of critical evaluation in relation to the world (p. 63).

Accepting that intellectual independence depends strongly on critical thinking confirms that its development is neither the sole prerogative of universities nor a self-contained task. New Zealand’s Education and Training Act lists four additional characteristics of universities (including that teaching and research are interdependent, that universities act as a repository of knowledge and expertise and that they accept a role of critic and conscience of society) all of which may also characterise other tertiary institutions, and all of which depend on and likely promote thinking that could readily be described as critical. In addition, the achievement of critical thinking is increasingly being recognised as a desirable objective of all education, not only higher education. Thinking, including the use of critical processes, is one of five key competencies in the New Zealand school curriculum.

Approaching a working understanding of what New Zealand's education legislation might mean by developing intellectual independence, it remains important to reflect on Malcolm & Tarling's "... *quality of thinking*" (Malcolm & Tarling, 2007, p. 224), Brookfield's "*The whole point of critical thinking is to take informed action*" (Brookfield, 2012, p. 12), Facione's skills and dispositions (Facione, 1990) and Scriven and Paul's "*guide to beliefs and actions*" (Scriven & Paul, 1987, np) and wonder not only how to develop intellectual independence, but what its bottom line might be.

Some Fundamental Limits to Intellectual Independence and How These Might Limit Its Achievement

Educational philosophers have examined the possibility of individuals using their own intellectual independence to critically assess expert bodies of knowledge as contributions to personal beliefs. Hardwig (1985, p. 335), for example, suggests that "*the list of things I believe, though I have no evidence for the truth of them, is, if not infinite, virtually endless ... though I can readily imagine what I would have to do to obtain the evidence that would support any one of my beliefs, I cannot imagine being able to do this for all of my beliefs.*" Hardwig (1985, 1991) goes on to assert that rationality sometimes involves deference to epistemic authority, and that the model of the rational person who always thinks for themselves is an unrealistic ideal, so that there is no such thing as an intellectually-independent knower. In their analysis of Hardwig's assertions, in the context of science and science education (as indicative of broader areas of expertise), Gaon and Norris (2001) develop these ideas to suggest that experts always rely on those more knowledgeable than themselves to build, for example, communal scientific knowledge; and that although rational intellectual independence of both experts and non-experts might be impossible (certainly undecidable), there are grounds to assert that critical assessment of science is still possible for non-experts. They argue that such critical assessment is possible because science itself is based on norms, beliefs and values that are contestable by non-scientists. They assert "... *the trust the layperson places in experts is no different in-kind from the trust experts themselves place in expertise. In claiming that a belief is rationally grounded, both non-scientists and scientists mobilise the ideal assumption that the chain of epistemological authority has an ultimate end that is scientifically justified.*" (Gaon & Norris, 2001, 199). Such analyses are of great importance to science education in particular, and to education in general. They provide insight into the nature of intellectual independence as conceptualised within the discipline of education, and to a degree more widely, and emphasise the educational purpose of what Gaon and Norris identify as 'content-transcendent modes of inquiry'. "*What such content-transcendent modes of inquiry can do, however, is expose some of the cultural, moral, social, political and prudential judgements that underlie expert knowledge, and that can potentially destabilise it from within.* (201)". It may be reasonable to suggest that the critical assessments that Gaon and Norris have in mind, expressed as questions, have much in common with what Scriven and Paul (1987) describe as Universal Intellectual Values. For

example, as asserted by Gaon and Norris (2001, 199), in the context of science education, “*Although only an expert can appraise the methodological validity of evidential claims, the non-expert can, and indeed should, always ask such questions as: Does this scientific belief embody or support any particular social hierarchies such as those based on race, on gender, or on class? ... students of science could gain a richer understanding of substantive science if they were taught to ask such questions as the following: Was any part of the data left out of the analysis as a result of its anomalous status? Which part or parts were omitted for the purposes of the experiment, and why? ...*” Compare with Scriven and Paul’s (1987, np) hopes for “*clarity, accuracy, precision, consistency, relevance, sound evidence, good reasons, depth, breadth, and fairness*” as an ideal underpinning for critical thinking.

Two arguments relate strongly to these thoughts.

The first is a long-standing debate amongst those who focus on critical thinking as a field of enquiry, about whether the development, or learning of, critical thinking skills and dispositions need to occur in the context of something in particular or if they can develop in the abstract, to be applied as the need arises. To some extent the question itself depends on the philosophical and educational context in which the question arises. Critical thinking as a set of processes to develop logical arguments and to assess the strength of evidence likely does need to be developed as sets of generalised skills. It seems reasonable that students cannot be taught all of the possible permutations and processes involved in developing sound arguments and assessing the evidence in all situations. Rather, in general, the aim is to develop skills in logic and in identifying and allocating particular circumstances to defined parameters, underpinned by defined value-based dispositions, to solve logical challenges. Even in predominantly social settings, and in the domain of critical theory, there are still definable skills and dispositions involved in hunting assumptions and in identifying alternative explanations for observations, and these can be taught. The Brookfield approach for teaching for critical thinking, not unlike the transformational teaching approaches of Mezirow, emphasises the task of identifying and testing the assumptions that underpin claims and assertions, eliminating those that can be, and exploring alternative ways of seeing. Nevertheless, and as argued by Brookfield (2012, p. 21) “*Assumptions are rarely right or wrong - they are contextually appropriate.*” In this context at least, teaching students how to think critically in particular situations is highly dependent on the particular circumstances involved.

The second, at least in part dependent in the first, is the suggestion that only disciplines can provide the “*extensive training and special competence*” (Hardwig, 1982, 339) sufficient to require, develop and sustain the depth and quality of thinking imagined, for example, by Malcolm and Tarling (2007), or the intellectual independence explored in this article. The argument is, of course, complex; integrating much thought relating to multidisciplinary and interdisciplinary engagement. The idea of a university degree may be formulated on the prospect that graduates will possess a deep, coherent and extensive knowledge of at least one discipline and that the more generalisable graduate attributes,

such as critical thinking, intellectual capacity or indeed intellectual independence, generally develop and exist in the context of this particular discipline. Unless our graduate is equally proficient in two or more disciplines, combining more than one discipline could be interpreted as something less than that possible from one. The argument is also, to a degree, predicated on the possibility of diverse epistemic positions on the nature of knowledge. As argued by, for example, Repko et al. (2014) in promoting the advantages of identifying multiple disciplinary perspectives on any particular issue, there is a strong case to be made for critical pluralism (rather than say relativism) as an optimal epistemic position when confronted by issues that have multiple and often conflicting disciplinary perspectives to be said about them. “... if you take a sophisticated epistemic position, that of critical pluralism, you will see the multiple and conflicting perspectives as partial understandings of the subject under study. You will also realise that what is needed is not another partial understanding or uninformed opinion but an understanding that takes into account the subject’s complexity and that responds to the scholarship of disciplinary experts” (Repko et al., 2014, p. 143).

It may be concluded from this analysis that seeking to develop intellectual independence in New Zealand’s universities is rational, noting that intellectual independence: is not necessarily achieved in proportion to disciplinary expertise; may be limited by the need to construct particular educational outcomes that are necessarily built on disciplinary expertise; and is not necessarily dependent on the discipline studied. A key expectation may be that New Zealand’s graduates will always seek to determine to their own satisfaction the trustworthiness of claims made by experts and that the further they stray from their own, particular, discipline, the greater will be their need to depend on the epistemic authority of experts. Similarly, expecting intellectually independent graduates to exercise their independence to the same degree in all contexts is irrational.

Limitations to the Attainment of Intellectual Independence Consequential to it Not Being the Principal Aim

This section continues to explore limits to the attainment of intellectual independence by examining if and how some forms of university education, in attempting to achieve what may also be an important aim, inevitably seek to limit intellectual independence.

Teaching as bringing about conceptual change was considered by Dall’Alba (1991) as the most complete conception of teaching, and broadly speaking, as encompassing all other lesser conceptions of teaching. Other researchers have come to similar conclusions and Prosser and Trigwell (1999) summarised the findings of many in this area. These authors, and others, identified the characteristics of student-focused teaching strategies (or teaching approaches) aimed at changing students’ conceptions. Assuming, for the sake of argument, that several conceptions about any particular issue or element of knowledge are possible, and that the student holds one

of these and the teacher another, it is tempting to consider that teachers who identify their role as changing the conceptions of their students, aim to get the students to change from their existing erroneous conception to the teacher's own correct conception. Researchers and educationalists who make use of the concept of conceptual change generally reject this temptation. For such advocates, a teaching approach that aims to change students' conceptions, if it is adequately student-focused, must enable students to, for example, explore the assumptions that underpin their current conception, in relation to new empirical evidence, or logical analysis, so that the students question their current conception and build another that more reasonably addresses their new situation; "... *students are seen to have to construct their own knowledge, and so the teacher has to focus on what the students are doing in the teaching and learning situation. A student-focused strategy is assumed to be necessary because it is the students who have to reconstruct their knowledge to produce a new world view or conception. The teacher understands that he/she cannot transmit a new world-view or conception to the students.*" (Prosser & Trigwell, 1999, p. 154). Only a more teacher-centred approach might try to circumvent students constructing their own conception by transmitting the teacher's own conception. This analysis does suggest that student-centred approaches to teaching may be more congruent with universities' principal aim of developing intellectual independence than more teacher-centred approaches, and understanding the difference should be a priority for university teachers learning how to teach in higher education in New Zealand. In these contexts, professional education is a particular version of disciplinary teaching, with intended outcomes closely aligned with the knowledge, skills and values professed by particular professions; but with the same concerns about potentially limiting the intellectual independence of students by imposing a particular interpretation of their chosen profession on their developing minds.

In the last two decades of the twentieth century, educationalists were also coming to grips with the suggestion that academic disciplines were like territories within which distinct 'tribal' characteristics were discernible (Beecher, 1989). Both the conceptual change and tribal discourses suggested that conformity to limited ways of knowing, and thinking, rather than to intellectual independence, may have been in the past acceptable elements of disciplinary approaches to teaching. Both discourses have moved on. Trowler and others argue that the twenty-first century has reshaped the significance of disciplinary knowledge structures and practices, and perhaps lessened their influence (Trowler et al., 2013). On the other hand, conceptual-change pedagogies that emphasise disciplinary ways of knowing have increasingly given way to scaffolding approaches designed to position the learner to best be able to cope with the next learning step (see for example, Duschl & Gitomer, 1991); but arguably also an approach to limit intellectual independence in a necessary, earnest and honest attempt to support learning.

Civics provides a related discourse, emphasising the roles and responsibilities of universities as agents for social change, in prescribing what students should learn and how their behaviour might need to change if it does not already conform to key elements of social responsibility. As described by the Association of American Colleges & Universities (2018) "*Both educators and employers agree that personal and social responsibility should be core elements of a twenty-first century college*

education if our world is to thrive (np)”. Sustainability, encompassing both environmental and social justice, has become a common espoused quest for higher education around the world, often with a focus on what students should learn during their tenure at university. More than 900 higher education institutions internationally have joined the Association for the Advancement of Sustainability in Higher Education, whose mission is to “*To inspire and catalyze higher education to lead the global sustainability transformation*” (AASHE, 2021, np). These broad civic missions, while widely appreciated, do situate universities as agents of change not only with respect to what our students know or are able to do, but also in relation to their mindsets, worldviews and agency and what they may be willing to do. Some theorists have gone further, recruiting critical thinking skills to integrate critical thought with moral integrity and responsible citizenship within a pedagogy focused on moral development (see for example, Paul, 2000). Depending on how these missions are imagined and enacted by university teachers, they may seek to limit the independence of our students’ intellectual development by advancing another aim above New Zealand’s principal aim that universities should be developing intellectual independence.

The broad civic discourse not only addresses the potential power of universities for positive social change, but also incorporates social theories that explore the historical, and perhaps continuing, impact of higher education on our existing social order. Pierre Bourdieu’s exploration of education’s contribution to how social order is reproduced, and why, for example, social inequality persists across generations, is notable in this context (Bourdieu, 1986) and perhaps emphasises the importance of our graduates’ intellectual independence as a tool to curb the well-meaning, but nevertheless coercive power of educational institutions over their students.

Higher education is not, of course, immune from the inevitable contradictions that exist in life, but perhaps, given the legislated roles and responsibilities of universities it is surprising that these contradictions are so acceptable in these places. Universities internationally are debating whether or not university campuses should host speakers who have socially unpalatable points of view. It should be argued that exposing our students to diverse perspectives, even to perspectives offensive to some, rather than to only institutionally-endorsed perspectives, is an essential contribution to developing students’ intellectual independence on matters relating to their own developing sense of social responsibility. Similarly, promoting student health, by banning alcohol, nicotine, and on the University of Otago campus, cycling, might be counter-productive to realising universities’ principal aim of developing intellectual independence, albeit no doubt beneficial to safety and health.

Concerns About the Development of Intellectual Independence as the Principal Aim of Universities

Two matters of concern have stood out during discussions in preparation for this article and within the review process. The first relates to increasing concerns internationally about individualism and the second about changing perspectives on the roles of higher education itself.

In the discipline of politics rather than education, discourses about the individual extend beyond liberalism to individualism, as a social theory favouring freedom of action for individuals over state control. In such terms, the mantra of populist politicians and of right-wing extremists can easily overlap with the principal aim of New Zealand's universities. How ironic, given the origins of educational intellectual-independence in the writing of Dewey (perhaps the most 'democratic' of educational theorists) in finding fault with an educational system that encouraged docility in the acceptance of information (Oliver and Nichols, 2001). A higher education sector, fully confident in the veracity of its own rhetoric, might rationally work harder to convert its aim of intellectual independence into a measurable and attained objective, as a defence for graduate citizens against falsehoods propagated by social media, and as an alternative to abandoning the concept because another entity might falsely claim the 'independent' part of it.

Thinking as an individual, rather than as a collective, or a community, or a species, provides a link to the second and related concern that views the ecological and social problems of the world today as a consequence of western societies' veneration for the 'autonomous thinking individual' as an ideal. Gregor Bateson must be credited with much of the thinking that underpins these ideas and Chet Bowers with the thinking that related Bateson's work to matters of sustainability and education.

As the late Gregory Bateson warns, our survival depends upon a radical transformation of the dominant patterns of thinking in the West. These patterns are widely shared, passed along in everyday conversations, and encoded in the built culture. The institutions that give special legitimacy to these patterns of thinking are the public schools and universities. They also have the greatest potential for providing the conceptual space necessary for understanding the historical roots of the misconceptions underlying the myth that if humans rely upon rational thought they can control the changes occurring in natural systems. They also are sites where students can learn about the nature of ecological intelligence, and how the exercise of ecological intelligence leads to correcting the destructive impacts of earlier assumptions and practices on natural systems and human communities (Bowers, 2010, p. 1)

Perhaps New Zealand's hopes for intellectual independence relate most strongly to these dominant patterns of thinking, and insufficiently to the patterns of thinking that may characterise Māori (Aotearoa's tangata whenua or people of the land), other ethnic groups in New Zealand, commitment to the Te Tiriti o Waitangi | the Treaty of Waitangi and, indeed many who seek social and environmental justice. If so, perhaps Aotearoa New Zealand does need to have a renewed conversation on what intellectual independence is, in this nation's context, and even to consider if the development of intellectual independence should no longer be the legislated principle aim of its universities. It is notable, however, that learning theories of constructivism and of social constructivism, focussed respectively on individual thinking and on group thinking, are not mutually exclusive. Educational theory will surely assist all academic discourses that address learning and be a great asset to educators

as they grapple with the issues inherent to the pursuit of greater understanding of the roles of higher education.

Developing, Assessing, Evaluating, Monitoring, Measuring or Otherwise Researching Intellectual Independence

Given these struggles to define and understand intellectual independence, the fundamental and perhaps unavoidable limitations to the concept itself, and the apparent abilities of the institution of higher education internationally to prioritise other worthy expectations of university teaching over and above intellectual independence, it may be wondered if this next section has a purpose. This task is more appealing, and worthwhile, if graduates' intellectual independence is imagined as, in essence, a consequence of them learning the skills of and dispositions to critical thinking (as delineated, for example, by Facione, 1990); and that these learning outcomes are used by these same graduates to guide their own beliefs and actions (as emphasised by Scriven & Paul, 1987). That graduates should be guided by their own thinking, rather than by that of others is vital, to this imagining, as is the acceptance that graduates' actions could not in any circumstance be prescribed by others, no matter how worthy such prescription appears to be to society, to institution, to profession or to university teacher. That graduates will not only be able to think critically, but also willing to do so, is incorporated abundantly as a set of defined dispositions to critical thinking that support critical thinking skills. 'Persistence though difficulties are encountered' and 'willingness to reconsider and revise views where honest reflection suggests that change is warranted' provide important examples.

To make progress in this task, it is also important to accept the broad and contested nature of critical thinking and its multidisciplinary origins, and to suggest that some aspects of critical thinking (including those that relate to forms of perspective transformation, no matter how justifiable in the context of critical theory and social justice, and to moral development, no matter how well aligned to current espoused social values), have less to do with intellectual independence than do others (including most particularly the universal intellectual values of clarity, accuracy, precision, consistency, relevance, sound evidence, good reasons, depth, breadth, and fairness, as described by Scriven & Paul, 1987). As emphasised by Barnett (2015) something needs to hold together these diverse levels and domains of criticality. In the imagining, or model, proposed here, universal intellectual values may achieve this integration.

Given such imagining, with its inherent limitations, it becomes a not-insurmountable task to use the extensive literature on teaching and learning, on critical thinking and on assessment, to at least identify what is and is not known about teaching and assessing intellectual independence. Much is known about how to teach the skills inherent to critical thinking. The critical thinking skills delimited by Facione's expert panel have remarkable congruence with the stages of Bloom's original cognitive hierarchy and, by incorporating self-regulation, also with Anderson et al.'s revised Blooms taxonomy (Facione, 1990; Bloom, 1956;

Anderson et al., 2001. See also Shephard, 2020, for a comparative overview). The broad educational discourse identified as the Scholarship of Teaching and Learning (Glassick et al., 1997) has contributed much knowledge about how to teach these abilities, or skills. In particular, student-centred approaches to teaching are widely recognised as contributory to effective student learning, likely for intellectual independence as much as for other intended outcomes, and certainly for encouraging and developing aptitudes for lifelong learning. Much less is known about how to effectively assess the attainment of these skills as learning outcomes, or indeed how routinely they are assessed, particularly higher-order cognitive outcomes. These are key elements of a pressing research agenda. The research conducted under the auspices of Educational Testing Services is helpful in this respect (Ou Lydia Liu et al., 2016; Loyalka et al., 2021). That research does suggest that it is possible to precisely define many of the skills involved in critical thinking and reliably and validly assess these. Claims that particular disciplines inherently support the development of critical thinking skills without such verification are far from satisfactory (Hammer & Griffiths, 2015).

It is similarly challenging to be confident about higher education's approaches to teach and assess dispositions to critical thinking and the related universal intellectual values. Intellectual independence manifests itself as thought processes that people are able and willing to perform. Higher education is far from reaching consensus on the dispositions that lead to people being willing to do something, with particular values-based characteristics, so how to teach and assess them needs to be further researched. Shephard (2020) has reviewed 'willingness to reconsider', 'open-mindedness' and 'fairmindedness in appraising reasoning' in teaching and assessment contexts and Shephard (2022) has addressed differences between being able to do something, and being willing to do the same thing, as educational objectives. Shephard et al. (2021) have addressed open-mindedness in some detail, drawing extensively from the long-standing discourse in psychology on actively open-minded thinking (Baron, 2017). And although the importance of role modelling in teaching affective learning outcomes is widely recognised, its operational details are far from understood (Shephard & Egan, 2018).

Conclusions

It is tempting to conclude that developing intellectual independence is no more than an aspirational objective, on behalf of Parliament, to guide the actions of this expensive social enterprise of higher education towards noble, rather than simply pragmatic, purposes. Certainly, intellectual independence in these contexts is ill-defined and consequently challenging to demonstrate objectively in higher education nowadays. Perhaps, however, Parliament in 1989 understood New Zealand society's needs for an educated and intellectually-independent critical citizenry (as expounded, for example, more recently by Williams, 2014), identified the university sector as the most likely future contributor to this end and prioritised this above all else. If so, the challenge has been laid down, but not yet met.

Notably, in reconsidering the act in 2020, Parliament saw no reason to change this prescription.

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Declarations

Conflict of interest The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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