The standing of vocational education: Sources of its societal esteem and implications for its enactment

Stephen Billett, Griffith University, Australia

The standing of vocational education is salient for how it is perceived by those who sponsor, participate in and work within it and how its provisions are supported and administered. Yet, this standing continues to be intractably low, compared with other education sectors, more so in some countries than others. The consequences for this low standing can be profound. Serially, moreover, it has been the voices and sentiments of powerful others (e.g. aristocrats, theocrats, bureaucrats and academics) that have long been privileged in discourses about the standing of occupations and their preparation. In perhaps most instances, this privileging has and continues to come at a cost to the standing, processes of and goals for this important educational sector. Indeed, the legacies of earlier sentiments about and conceptions of different kinds of occupations and their preparation are now deeply embedded in societal discourses and variously sustain and constrain the standing of vocational education. At its strongest, concepts such the Berufsconcept in the German speaking world does much to sustain and elevate vocational education. Elsewhere, this lowly standing generates constraints that comprise efforts to control and micro-manage those who teach and learn. Adopting a historical approach, this paper offers a brief and partial account of how, across time, sentiments of powerful others have shaped the standing of vocational education and its proposes and practices, often for purposes of power and control. Instead, it is proposed that for vocational education to realise it purposes necessarily requires it to be informed by and directed more by the interests of those learning about, teach and practice]'-these occupations. In addition, the need for societally-based (i.e. governmental) imperatives to ameliorate the longstanding consequences of these sentiments for vocational education are proposed.

Vocational education

Vocational education is an important and worthwhile project. Its goals and processes are directed to meeting salient societal, economic and personal purposes. These purposes have long been recognised as developing the capacities for providing the goods and services societies need to function and secure their continuity and progress (Ainley 1990, Bennett, 1938, Stow 1847). Such purposes also extend to assisting individuals identify with, become competent in occupations so they might become their vocations (Dewey, 1916) and, more recently, for sustaining occupational capacities, and employability across lengthening working lives (Organisation for Economic Co-operation and Development (OECD), 2006). Given the salience of these purposes and national, institutional and personal contributions to and investments in vocational education, it warrants effective and well-considered policies and practices. These need to be supported by clear and informed conceptions of these purposes and how they should be realised. Through such means, vocational education can best fulfil societal expectations, and generate returns on the national, community and personal investments directed towards it. In doing so, it is more likely become more accepted as important element of nations' education systems. Yet, whilst enjoying high status in some countries, in others and despite being a significant and long-standing educational sector, it continues to suffer from low status and negative societal sentiments (Hillmert & Jacob, 2002; Hyslop-Margison, 2001). Aligned with such sentiments is the practice in a growing number of nation states for vocational education to be subject to intense forms of regulation and management mandated by external bodies seeking to control and stipulate its provisions, processes and outcomes and in unhelpful ways (Billett, 2011). In countries where vocational education is most valued these regulatory practices are relatively weak. Indeed, where vocational education's standing is strongest in the German speaking world, the societal conceptions of Berufsconcept does much to sustain and elevate vocational education (Deissinger 1994).

Therefore, in many countries, transformations are required in societal sentiments about vocational education for it to able realise its purposes including assisting individuals identify and come to practice their occupations as vocations, without unwarranted interference and external mandation. Further, rather than its provisions being wholly centred on responding tightly to national government and industry policy imperatives, that a greater emphasis is needed to engage and be informed by those: i) who practice the

occupations to be learnt (i.e. practitioners), ii) those seeking to learn them (i.e. students), iii) requirements to assist organise and enact those provisions locally and iv) including those who teach or otherwise assist this education. These changes are suggested as both a remedy and amelioration for an enduring problem that beggars the project of vocational education in many countries: its lowly standing. Across human history, it has been 'privileged others' whose voices and influences have shaped the standing of occupations, those who work in them and how the individuals are prepared for them, and often to their detriment. The domination of 'privileged others' views has led to many occupations and, by association, vocational educational provisions being positioned as of low standing and worth. Bourdieu (1984) reminds us that class distinctions are maintained deliberately through such means. So, because of the consequences of its relative standing, there is now a clear need to redress this problem in many countries including securing greater inclusion and balance amongst the range of interests shaping vocational education's purposes and practices. That is, for a broader range of interest to shape the conceptions, focuses, practices, and standing of vocational education. Such an amelioration requires the goals and processes for vocational education to be more informed by those who practice them (i.e. practitioners), and those who support their implementation (e.g. teachers) and those who experience them (e.g. students, apprentices). These measures seem important because as Quickie (1999), Carr and Hartnett (1996) and Bourdieu (1984) all suggest that mere access to educational provisions do not change relations or boundaries in societies. Here, it suggested these relations and boundaries need to be fundamentally realigned.

In making its case, this paper first outlines how the standing of occupations and vocational education has been shaped overtime by 'privileged others'. The enduring legacies of distinctions made about occupations and their preparation by aristocrats date back to at least Hellenic Greece. These legacies are then shown to have a potentially negative legacy on the standing of occupations and vocational education in contemporary western societies. Included here is how rise of professions and their higher education preparation both contributed to and sustained social class segregation through industrialisation. The case is then advanced through using more contemporary accounts elaborating a consideration of how the formation of vocational education systems arose through imperative of newly founded nation states including the need for controlling young people and securing their employability. Yet, these goals were to be achieved through purposes and practices that are subject to the actions of these states' bureaucratic structures. In conclusion, a proposal advocating a mature provision of vocational education focussing more on the needs of those who learn and work practice occurs is advanced.

Vocational education's standing rooted in dominant societal sentiments

As foreshadowed, across human history, it has largely been 'privileged others' who have shaped the societal standing of occupations and the means of their preparation (Bennett 1938, Billett, 2011). These 'others' comprise variously aristocrats, theocrats, bureaucrats and academics who have articulated and sustained societal sentiments and discourses about occupations from positions of power and/or privilege. In the past, and often currently, the worth of occupations and their preparation are advanced and perpetuated largely in the absence of the voices of those who practice them (i.e. practitioners), those assisting others learn those occupations (e.g. teachers), and learning about those occupations (i.e. students, apprentices). This circumstance is problematic when that sentiment is unreasonably negative. Overtime, it has had a series of consequences for vocational education, including its standing, purposes and processes. For instance, many requirements for occupational performance and the means to learn them are quite situational and, therefore, need to be engaged with and learnt locally (Billett, 2001). Yet, whereas such situational requirements are accommodated in in Germanic countries (Sloane 2004), elsewhere, in contemporary provisions of vocational education these considerations and practices are absent. Instead, the form and standing of occupations and ordering of vocational educational provisions are abstracted from actual practice, and codified centrally by others who are remote from and disconnected with the enactment of occupational practice and those who are teaching and learning. To understand both the sources and consequences of these practices the following sections outline instances of how 'privileged others' have shaped the form and standing of vocational education, commencing with how the sentiments about occupations in Hellenic Greece have endured to this day.

Aristocracy: Hellenic Greece, Imperial Rome and China

When considering the qualities and standing of workers in Hellenic Greece, Plato distinguished amongst three categories of practitioners (Lodge 1947). There were *Artisans* who engaged in activities such as building, carpentry, pottery, weaving that lead to the creation of tangible product or services. Then, there were *Artists* - comprising musicians, painters, poets who produce something concrete, beautiful and useful. There were also *Professions*, including occupations such as medical practitioners, lawyers, theologians and the military. Plato made clear distinctions amongst the standing of these three categories of workers, and how preparation for their occupations should proceed. He held that "artisans and artists' work belonged to that side of life that the average free born Greek citizen should regard as "banausic" and unworthy of his serious attention" (Lodge, 1947: 15). Thereby, he held the majority of work being undertaken in Hellenic Greece as being of very low worth, and certainly not of interest to free born citizens (i.e. males) who had choice in their pursuits. Aristotle concurred:

The citizens must not lead the life of mechanics or tradesmen, which is ignoble and far from conducive of virtue. (Aristotle, 1964 p. 60, cited in Elias, 1995)

Aristotle also proposed categories of knowing or arriving at the truth comprising: i) pure science (i.e. episteme); ii) art or applied science (i.e. techne); iii) prudence or practical wisdom (i.e. phronesis); iv) intelligence or intuition (i.e. nous); and v) wisdom (i.e. sophia) (Moodie, 2002). Of these, techne is the category that has become closely associated with and characterises occupations served by western vocational education systems. Indeed, Aristotle is held to have changed the word describing craft workers (demioergos) to the term cheirotechnon - which means 'hand worker' (Sennett 2008). In doing so, the conception of vocational education became limited to the development of practical application and an emphasis on manual procedural activities (Aldrich 1994), rather than pure science, practical wisdom, intuition or wisdom.

Yet, beyond characterising these occupations being of low standing and limited worth, Plato also held that as a category of workers artisans were incapable of generating new ideas and "had to wait for God to invent a solution "to their problems (Farrington, 1966: 105). So, when new work requirements arose, such as finding a novel way to respond to a work task or occupational problem, or responding to new occupational requirements, artisans were held to be incapable of responding effectively to these challenges. Instead, these workers would have to rely on others or even nature rather than their own capacities:

... human capacities had little to do with the effectiveness of their enactment – "... nature gives the increase. Human reason does little compared with nature." (Lodge 1947: 16)

Similarly, Aristophanes bluntly referred to potters as "stupid buffoons" because of the work they do (Sennett, 2008). Aristotle in *Metaphysics* stated that "we consider that the architects in every profession are more estimable and know more and wiser than the artisans, because they know the reasons of things which are done" (Sennett 2008: 23). In these ways, societal elites (e.g. Aristotle, Plato, Aristophanes) suggest that not only are these occupations of low standing and limited worth, but those engaging in them are of inherently limited capacities and unable to innovate or respond to new requirements and challenges. So, such workers are held to be unable to improve, innovate, adapt, or otherwise utilise their knowledge in novel ways. Hence, the possibilities not only for these occupations, but those who work in them are positioned as being inherently limited. All of this is contradicted by the consistent evidence of the ways that practitioner innovations drove developments across pre-industrial Europe (Epstein 1998)

Such sentiments also shaped considerations of educational provisions required for learning these occupations. Plato proposed that the "lowest form of education to be for those who worked with their hands and not with their minds" – this was to be referred directly back to the applied quality of knowing (i.e. techne) (Elias, 1995). Such sentiments were applied to a range of occupations, some of which enjoy relatively high status in contemporary societies. For instance, Lodge (1947) reports, that for Plato "the nurse and 'tutor' were domestic servants, who were of no particular use in other respects" (p.35). So, their capacities were specific, low standing and only warranting a corresponding kind of preparation. Yet, such sentiments were not restricted to Hellenic Greece. A similar sentiment is exercised in Imperial Rome. Cicero states that "… now in regard to trades and employments, which are to be considered illiberal … all

craftsmen are engaged in mean trades, for no workshop can have any quality appropriate to a free man." Marcus Tullius Cicero – De officiis (On Duties) passage translated by Findlay in Ancient Economy 41 -2. Pramod (cited in Barbieri - Low (2007).

It is noteworthy that in early imperial China there was a more nuanced appreciation of, yet similar ordering of artisan skills and their development. In this hierarchical society, manual skillfulness seems to have been more valued than in Hellenic Greece, for instance (Ebrey 1996, Portal 2007). Confucius was renowned as an archer and calligraphy was required by those seeking to enter and then gain promotion in the merit-based public service. In the Tang dynasty, which is noted for the intricacy and sophistication of its craft work, there were state codes distinguishing amongst different kinds of artisan work and ordering the duration of their training accordingly: metalwork in gold, silver and bronze (4 years); woodcraft (3 years), regular crafts (2 years) bamboo and lacquer work (1 year) and other forms of work as little as 6 months (Barbieri - Low, 2007). In a society that made much of bureaucratic ordering, the classification of artisans' work was based on claims about its demands and complexity. Nevertheless, these classifications still reflected a strict and codified hierarchy of work, and, importantly, were identified and ordered by a powerful and elite bureaucracy.

Of course, such sentiments and practices might be dismissed as being those expressed long ago and in other places and, whilst interesting and curious, lack relevance to current practices, conception or sentiments. However, it is easy to identify enduring legacies of these sentiments and practices being exercised contemporaneously.

Contemporary legacies for vocational education: standing of work and capacities of those who work Although having their origins in much earlier times, the sentiments and practices from Hellenic Greece appear to be influential and enduring to this day in terms of the standing of occupations described as being performed by artisans, and beliefs about the limited capacities of workers engaged in low status occupations. Certainly, sentiments associated with occupations based on the use of hands (i.e. manual) as being inferior to activities to those relying more on the mind (i.e. mental) have long endured in Western societies (Lodge, 1947; Sennett, 2008). This sentiment was reflected within monastic traditions in which lay brothers and sisters did menial work, whilst monks and nuns devoted themselves to 'higher' concerns of contemplation and study (Elias 1995). More contemporaneously, rehearsing Plato, Aristotle's and Cicero's sentiments, yet without offering any evidence, Bauman (1998) claims that the majority of individuals' occupations are without worth and they are "locked into meaningless and degrading work that offer little opportunity for notoriety or fulfilment" (p.36). Seemingly, like those before him, Bauman (1998) failed to consult those whose work he characterised and made judgments about and on their behalf. Had this privileged academic other taken into account the kinds of insights about the meaning of work to these individuals that Noon and Blyton (1997) and Billett and Pavlova (2005) secured through their engagements, his conclusions might be different. Indeed, Plato's sentiments about the standing of occupations (e.g. mental or manual) and their demands, and those who engage in them are reflected in relatively contemporary accounts of occupations' societal esteem (Aldrich 1994). The Hope-Goldthorpe Scale (1974) (see Figure 1) which is reproduced from a standard sociological reference work (Jary & Jary, 1991), depicts a hierarchy of occupations' social desirability that is highly analogous to what Plato proposed. This hierarchy progresses from: Class 1 - high-grade professionals, managers, administrators and life proprietors; Class 2 – lower grade professionals and managers, and high-grade technicians; Class 3 – Routine non-manual workers; Class 4 – small proprietors and the self-employed; Class 5 – lower grade technicians and supervisors of manual workers; Class 6 – semiskilled manual workers: and Class 7 – semiskilled and unskilled manual workers. Evident in this classification system is a hierarchy largely premised on distinctions between mental and manual divides that rehearses the sentiments of elites from Hellenic Greece. These elites did not engage in physical and manual work activities, but rather pursuits of the mind and leisure (they had slaves and others to do that).

Noteworthy in Figure 1 is that routine, but non-manual work is seen as being far superior or desirable than the capacities of skilled manual workers, for instance. That is, even the most skilled of 'manual' workers sit below those occupations classified as being mental, yet could comprise the most routine of activities. It seems manual work, however skills, is by its very nature posterior to routine clerical work, the instance.

Figure 1 Occupational Scales (Hope-Goldthorpe Scale 1974) – social desirability

Class	Occupations
Class I	High-grade professionals, managers, administrators and large proprietors
Class II	Lower grade professionals and managers, and higher grade technicians
Class III	Routine non-manual workers
Class IV	Small proprietors and the self-employed
Class V	Lower-grade technicians and supervisors of manual workers
Class VI	Skilled manual workers
Class VII	Semi-skilled and unskilled manual workers

One wonders where the orthopaedic surgeon (i.e. professional work with manual element) would fit in such a hierarchy. So this 20th century hierarchy of occupational desirability is highly consistent with sentiments advanced in Hellenic Greece about the standing of manual work and learning of 'techne', thereby hinting at the durability of such societal sentiments and their adoption and continuity in contemporary times.

Indeed, such expressions of and requirements for work comprising the goals for vocational education are also found in the Australian Qualification Framework (AQF) and those currently being advanced in the Europe Training Framework (ETF) and, within the German Qualification Framework (DQF). These hierarchical schemes articulate generalisations about occupational requirements and their development as being given in the nature of the occupation. Yet, the ordering of occupations in such schemes is highly problematic and largely non-explanatory exactly because the work requirements in the enactment of occupations are not wholly given or uniformly applied. Indeed, the premises for such frameworks are problematic on at least these three counts: i) occupational practice are not uniform and cannot be simply ordered hierarchically, ii) all forms of work require higher forms of cognition and iii) much work is not constrained to its techne, and cannot be classified by occupations alone.

Firstly, the requirements for performing the same occupation are different across the range of circumstances where they are practiced, and consequently expert performance is likely to be highly situated (Billett 2001). There are distinctive requirements for occupational performance (e.g. activities, clients, circumstantial factors etc) and these arise in ways that beggar efforts to present occupations as being uniform practices. Any occupation is subject to diversity in its performance and work requirements. High status professionals, such as doctors' work, may largely be highly procedural and routine, in one setting and frequently novel, requiring the generation of new responses and their appraisal, in another circumstance of practice. For instance, and for good reason, some doctors engage in routine screening practices, such as those identifying and treat skin cancers. Yet, this important work, is largely comprises routine set of procedures. Such requirements are different in scope and novelty than those for a doctor working in a remote or regional location where they need to address the range of health-related issues presented in that community, from vehicle crashes, to workplace injuries, child birth, depression, geriatric care etc. Yet, similarly, workers in other occupations can engage in activities that demand more strategic, all-encompassing and comprehensive sets of procedures. Therefore, it is also flawed to rank occupations hierarchically because you cannot do this when they are not uniform or given in ways which permit hierarchies to be articulated. Consequently, it is not fair or reasonable use a uniform conception of an occupation to order or rank their demands.

Secondly, a hierarchy based on the presumptions about the ordering and complexity of the knowledge required to practice an occupation is problematic, because they are based on these sentiments rather than any evidence. AS noted, occupational requirements are not given as organised in bureaucratic forms such as these hierarchies. For a long time, the AQF had eight levels of competence and associated qualifications. Those at its lower levels are categorised as engaging in highly routinised work and requiring high levels of supervision, thereby rehearsing Plato's claims that such workers do not require (or possess) higher order capacities. Yet, the evidence suggests that similar levels of requirement to engage in nonroutine work activities are required across the range of occupations regardless of whether they are labelled

professional, paraprofessional, trades worker or so called semi-or unskilled work (Billett, 1994). That is workers in these categorises all reported needing to engage in higher activities because of the change in their work and dynamic work performance requirements. So, the ability to complete novel tasks and higher order capacities are likely to be evident in all occupations, it seems, not just those at the top of the hierarchy. Darrah (1996) similarly concluded that the extent and complexity of the knowledge required by production workers in a computer manufacturing plant were commensurate with those of system designers, who enjoyed far higher levels of pay and superior conditions. Compared with the latter, the production workers were relatively low paid, not championed nor provided with training opportunities for personal or career advancement. Importantly, their status was seemingly a product of uninformed sentiments that assumed system-designers' work was inherently more demanding than production workers. Yet, production workers' required abilities to constantly adapt their work to meet production quotas in the face of inconsistent or inadequate supply of components. This situation required them to problem-solve and adapt what was available to them to secure the production quotas upon which they and the designers' continued employment depended. These findings suggest the requirements for and ability to engage in non-routine work activities and, therefore, the need for higher orders of cognition to adapt and extend existing knowledge are not reserved for work atop occupational hierarchies. Instead, abilities to engage in non-routine activities and requirements for higher order capacities are reported as being common to all forms of work. Such findings certainly contradict claims about both the lower level requirements for work and the limited qualities of workers' adaptability that Plato and Aristotle claimed. Certainly, given changing nature of work and work requirements (Noon & Blyton 2002), and the particular needs of specific work activities (Billett, 2006), it seems that workers in all kinds of occupations require higher-order capacities and, as such, they warrant educational provisions that can provide the capacities to address these requirements.

Thirdly, it is wrong to rank forms of work on their occupational-specific capacities alone, because there can be other dimensions to the enactment of work that go beyond those capacities. For instance, the scope of many workers' capacities extends beyond their performance of occupational-specific requirements to include activities such as managing the small businesses that comprises their work. So, beyond hairdressers, plumbers, electricians et cetera needing to be competent in their occupational skills they also required to be operate businesses, develop and maintain clienteles, supervise other staff, manage cash flows and market their work, make strategic decisions about and acting to sustain their business. All of these tasks require higher capacities and extend a consideration of work beyond being defined by a set of occupation-based categories. To suggest that these work requirements are inherently of a lower order than work described as being professional or paraprofessional, which can themselves comprise routine technical roles, is not justifiable and merely rehearses what is depicted in Figure 1 and what Plato erroneously proposed.

Hence, the demands and complexity of work are not wholly given in the occupation per se, but in the circumstances of its enactment, which are highly differentiated. Consequently, judgements about the demands of individuals' work and needs for its their preparation are not just given in hierarchical orderings of occupations. Instead, they are subject to situational factors that shape the actual work performance, and the kinds of preparation required to accommodate and be commensurate with those requirements.

The adequacy of preparation and education

Following from the above, the duration, kinds of preparation and experiences required for occupational preparation differ widely. Yet, informed and reasoned considerations are not always evident in decision-making about how vocational education provisions should proceed. The preparation for occupations with low standing and perceived limited requirements is seen as being realised through specific, short-term training provisions leading to low level certification, if at all (Darrah 1996), thereby reflecting precepts dating back to at least to Hellenic Greece. Such precepts appear to be the rationale for, for instance, reducing the duration of trade training in Australia (Choy, Bowman, Billett, & Wignall, 2007). Since 1945, when both the duration of Australian medical and trade training was six years, the duration of medical training has remained largely unchanged, whilst trade training has been reduced to either three or four years. Recent pressure from employers' associations for the duration of this training to be shortened even further, came with the suggestion that such skills could be developed in 18 months (Choy, et al., 2007). The assumption frequently articulated by the 'industry' informants was that learning trade skills is relatively

straightforward and could be learnt more quickly than the current period of three or four year's apprenticeship. These informants were concerned to address perceived shortage in skilled trades work by shortening the duration of their preparation. Yet, despite there being a shortage of doctors, there is rarely similar press to reduce the duration of medical training. Of course, quite different kinds of esteem are assigned to these two kinds of skilled work.

So, as can be seen, perceptions about work also shape the processes and form of vocational education. The forms of knowledge or capacities comprising the requirements for artisanal types of occupations are statable and quantifiable. Therefore, in a growing listing of countries, these capacities are held as being captured through measurable outcomes premised upon behavioural accounts (e.g. competency-based standards and assessment). Some countries, such as Australia, have also implemented non-graded (i.e. pass/fail) assessment procedures stipulating that learners are either competent or not (yet) competent. Again reflecting sentiments from Hellenic Greece, because this knowledge is held to be straightforward and unambiguous, it can be assessed in terms of whether the students have 'got' or 'not got' it. Yet, such an approach to assessment and certification denies the depth of complexity, situational requirements and that this knowledge can be appraised through such means. It also ignores evidence from over 30 years of research into expertise whose findings consistently emphasises the complexity of domainspecific and strategic forms of knowledge required for occupational performance (Ericsson, 2006), and that even for the same occupation, performance requirements differ across instances of practice (Billett, 2001). Such erroneous precepts about assessment are also sometimes supported within the academy. For instance, the highly respected curriculum theorist (Stenhouse, 1975) concluded that whilst behavioural objectives are inappropriate for school education, they might serve well the purposes of vocational education. Hence, he merely rehearsed, rather than submitting to critical appraisal, a long-held sentiment that this kind of learning is straightforward and easily quantifiable (i.e. assessable) through these measures.

Curriculum development in vocational education has also often been shaped by enduring conceptions and practices about the limited capacities of those engaged in 'lower-level' kinds of occupations, in ways consonant with those proposed in Hellenic Greece. For instance, the voice of industry, which is privileged in decision-making often are those representing capital (e.g. employer organisations), and labour (e.g. unions) with a mediating role by government. Yet, there is no guarantee that those who actually practice occupations or teach are directly consulted in such industry-led curriculum arrangements. Processes such as Design a Curriculum (DACUM) and others deployed to inform occupational standards often gather perspectives from spokespersons for those who practice, but not workers themselves, there alone students (Willett & Hermann, 1989). Practitioners were only to be engaged with when points of clarification were required by 'industry' representatives speaking on their behalf. That is, only when industry spokespersons conceded limits in their own knowledge were those who actually practice engaged with as informants. In many ways, such a process captures and executes the long standing sentiments about these workers; they are incapable of giving the increase and need to rely on others to articulate what they know and can do. There are also curious institutional legacies seemingly arising from the kinds of sentiments. For instance, in the mid-1980s, the colleges offering adult and vocational education in England were given a negative nomenclature: Non-Advanced Further Education. Whilst it was soon realised that such a title was unhelpful and (unsurprisingly) failed to secure the interest in these programs and outcomes government intended (Parry, 2009). Yet, it was left to those administering and teaching in the these institutions "to recover or remake a mission for a further education sector, one 'no longer burdened with the negative language of non-advanced further education" (Stubbs, 1988, cited in Parry 2009: 331).

Yet, also enduring and limiting is how vocational educators are being positioned within many contemporary vocational education systems. Just as Plato suggested tutors were of little worth other than in instructing, in many vocational education systems educators are positioned as mere implementers and assessors what others have decided should be learnt, taught and assessed. Their roles in terms of identifying educational purposes, responding to local needs, determining the content and prioritising what should be taught and how are often marginal and marginalised. Hence, the imposition in a range of countries (e.g. Netherland (Imants, Wubbels & Vermunt 2014), Australia (Baverstock 1996, Brennan-Kemmis & Green 2013), Finland (Vahasantanen & Billett 2008), Sweden (Wärvik 2013) of national and highly prescribed curricular, modularised units and standardised resources reinforce attempts to seemingly 'teacher proof' vocational education provisions. Teachers' roles are being re-positioned to merely implement what others have decided should be taught: teach and assess as they have been told. Yet, it

seems that teachers will inevitably seek to work around and adapt even the most prescriptive syllabus, materials, and expectations because they have their own understandings, rightly or wrongly, about student needs and how these might best be addressed. That is, they have to implement learning experiences for their students. Studies from a range of countries indicate that it is simply not feasible, helpful or even plausible to position vocational educators as mere implementers because effective teaching roles – the effective curriculum - simply defies this kind of positioning (Vahasantanen & Billett 2008; Imants, Wubbels & Vermunt 2014; Tafel-Viia, Loogma, Lassur & Roosipõld 2012, Vähäsantanen et al 2008).

Yet, it was not only aristocrats of earlier eras that shaped the nature and standing of vocational education contemporaneously. Considerations of how and what was worthy of particular kinds of preparation, were also promoted and extended in particular ways by secular accounts, and exercise a different kind of power and privilege. These became even more pervasive with the decline of the potency of religious beliefs in eras of modernity and through bureaucratic means continued shape individuals' sense of self or subjectivity, as well as conceptions of their work and occupations.

Secular accounts

Across the 18th and 19th centuries, European concepts of worthwhile work increasingly came to have secular connotation (Quicke, 1999). These accounts were the product of, but also contributed to, how occupations came to be valued and how judgements about them were made and means of their preparation in an era of modernity and displaced some of the earlier influences of both aristocrats and theocrats (Kincheloe, 1995). Yet, they also served particular emphases in work and divisions amongst different kinds of knowledge (Winch, 2004). In newly industrialised and democratised nation states, where previously work was an activity carried out and learnt within family or immediate community (Greinert, 2002), the basis for self or subjectivity became increasingly located outside of family and the immediate community. In these modern times, such bases for identity were becoming increasingly important as issues of the self became less wedded to the hierarchies of aristocrats and approval of theocrats (Dawson 2005). Individuals' identity as workers became more an expression of personal fulfilment and achievements (Dawson 2005): i.e. outside of birth-right and religious beliefs. In an era where possibilities grew for individuals to engage in occupations outside of those circumstances of their birth (i.e. family, community and geographical) new possibilities emerged. Hence, the standing of occupations were open to social articulation in ways that compromised the interests of societal elites. Consequently, new means for ordering occupations and their preparation came into play. Also, other social forms were emphasised or emerged as bases for making judgements about occupations and their preparation. These included the continuation of social class and gender segmentation by perpetuating occupations' standing and means of their preparation (see Bourdieu 1984 p.110). So, the legacies of the past continued to be rehearsed and, in some ways, became more stoutly defended by educational provisions as privileges of the past were replaced by new arrangements and societal orderings.

Perhaps most noteworthy were the imposed distinctions between professions and other kinds of occupations. Indeed, now that class, gender and other hierarchical barriers were being assailed, educational provisions came to serve the interests of elites through reinforcing the relative standing of professions, through mediating their access (Elias 1995). In doing so, these educational provisions affected a privileging and segmenting of societal class in eras of rising aspirations across all classes. For instance, the so-called liberal university education in Britain and other European countries became vehicles for preparing, usually, male students from relatively privileged backgrounds for employment in the clergy, public service or diplomacy (Elias 1995, Aldrich, 1994). Moreover, newly industrialised economies were generating new technical and scientifically based occupations that were classified as professional or paraprofessional. In countries such as Germany and Britain, the demand for these new occupations led to the establishment of new kinds of universities and higher educational programs able to prepare practitioners for these new professions (Sanderson, 1993). They were also organised and populated by those keen to sustain social and economic advantage (Elias 1995), and did so by making distinctions with manual work. Hence, these educational provisions reinforced societal hierarchies in which those occupations where to be valued and remunerated in ways set out in Figure 1, whose antecedents date back at least to Hellenic Greece. Yet, again this hierarchy was premised on societally-imposed distinctions, rather than informed comparisons of work requirements. Recent critiques consistently identify few if any

distinctions between that which is labelled as professional work and other kinds, except perhaps in the massiveness of the required knowledge (Winch 2004).

So, it was largely 'privileged others' that shaped the standing of occupations and stipulated the kinds of educational provisions to access them and who would participate in them. Hence, they sustained occupational hierarchies in an era when social mobility was becoming more possible, and as shaped by societal interests. To illustrate this sentiment, it is noteworthy that the middle-class interest in craft work only occurred in the 19th century after its economic role had been displaced (Adamson, 2007). So, once they were no longer identified with manual work for utilitarian purposes, craft work became worthy activities for those who had leisure time to do so. Indeed, Kosslyn, Thompson, and Ganis (2006) hold that the Arts and Craft movement was an idealistic middle-class movement that only became societally acceptable when earning a living through such crafts was no longer practiced and its aesthetic virtues could predominate over any basis of economic necessity. Hence, what was societally unacceptable became acceptable through transformed societal sentiments, but on the terms of relative elites.

Yet, following industrialisation, within modernity and the formation of modern nation states arose a set of circumstances that continued the ordering of occupations and also vocational education in ways consistent with earlier eras: by powerful others. In this case, these influences were articulated through state bureaucracies.

Shaping vocational education provisions: Role of bureaucracy

The establishment of vocational education systems in many countries arose around the time of industrialisation and the formation of modern nation states (Green 1994, Stratmann 1994). Their formation is often associated with three kinds of national imperatives: i) the need for skill workers, ii) developing the employable capacities of young people and iii) engaging young people as citizens with nation states. Firstly, for many countries, particularly those within Europe, the need for the systematic development of skilled workers arose through the displacement or destruction of the family-based business which had been the source of skilled workers for a millennium or more (Greinhart, 2002; Hanf, 2002). Having transferred much work into factories and larger workplaces and having lost this traditional means of skill development, it became necessary for emerging nation states to develop vocational education systems to meet the growing need for skilled workers (Gonon, 2009b) in these newly formed nation states.

Secondly, there has been and remains a long-standing concern about developing young people's skills to ensure they do not become a burden for their local community by being able to secure employment and contribute to their community (Ainley 1990, Gonon, 2009a). This concern was exercised, in the British Poor Law, for instance, where each parish was responsible to ensure that orphans, the children of vagrants or abandoned illegitimate children had opportunities to learn an occupation to avoid becoming dependent upon the local parish (Bennett, 1938). Later, to both avoid the exploitation arising through industrialisation and the need to develop skilled workers, nation states came to form vocational education systems. As the supply of skilled workers for became key concerns nation states, interest in vocational education systems grew (Green, 1994). Moreover, having large numbers of unemployed young people, particularly males, lead to concerns that their activities might threaten the nation state's interest and progress. There were concerns that such disengagement might lead to social unrest, lawlessness, socialism and efforts to overturn these nascent nation states (Gonon, 2006; Troger, 2002). Indeed, Foucault (2009) emphasises an important instrumental quality of these nation states in attempting to manage the population through mechanisms that suppressed disorder, irregularity and delinquency, as well as illegality. The early versions of the French vocational system were established partly to address such concerns (Troger, 2002). Debate about what should constitute the American vocational education system (i.e. Sneddon verses Dewey) occurred in 1917 when many hundreds of thousands of servicemen were returning home at the end of the First World War (Gonon 2006). Similarly, in Australia, the Federal government first intervened and collaborated with state governments to establish a vocational education provision capable of skills required to produce materials for the Second World War (Dymock & Billett, 2010). Towards the end of that war, that interest was sustained through the first nationally focused vocational education program that assisted returning servicemen and women make successful transitions to peacetime occupations. So, these initiatives were founded on concerns to ensure transitions to civilian life, including gainful employment, and to avoid social disengagement. Hence, state concerns about the employability of

its citizens, being employable and contributing to the nation state, rather than relying upon it, were central to the formation of some national vocational education systems.

Then, there were those concerns about securing young people's affiliation to nation states, which comprises the third imperative. At the time of their formation, many individuals' loyalty was to their 'estate' rather than the nascent national state, which was a new and sometimes hybrid concept. Not surprisingly at this time, Individuals' existing affiliations and allegiances were to the aristocrats or land owners on whom they were in dependent for their homes and livelihood (i.e. the estate), or the guilds to which skilled workers were members and had as their principal loyalties (Stratmann 1994, Gonon, 2009b). Indeed, the disestablishment of guilds across Europe was partially to break the power of the estates (Stratmann 1994, Greinhart 2005). The re-formation of guilds under bureaucratic control in Germany and Austria, for instance, was undertaken by newly-formed nation states concerned to secure centralised state power and control and to neutralise rival source of power and allegiances (Frommberger & Reinisch, 2002; Troger, 2002). In an analogous way, and more contemporaneously, there is sometimes contestation between regional (e.g. state, provincial) and central government in the organisation of vocational education across a range of advanced industrial countries. Strongly centralist and federal nations such as Australia and Germany are able to govern and control the 'estates' (i.e. states and landers) through conventions and legislative means, whereas in other countries the 'estate' in the form of states still hold considerable power and rebut the efforts of the centre for greater centralised control (Greinert, 2005). Of course, now in federated system such as those within the European Union there is another complex layer of central control seeking centralised power over states through the use of common policies and practices, and need for adherence to EU premises. So, bureaucratic overlays of the European Union again stand to work against localised and tailored vocational education provisions (Heikkenen, 2002) of the kind that can readily address those needs.

These three imperatives have had two direct consequences for vocational education. Firstly, these education systems are positioned to address state imperatives, and, consequently, are ordered through bureaucratic and centralised means. Secondly, there is an enduring emphasis on entry-level training with an abiding focus on young people's employability. Hence, most contemporary vocational education systems have become closely aligned with and focus on young people's initial preparation for work and working life. These systems are shaped by concerns about their employability and responding to youth unemployment, rather than continuing education across working life, for instance. As long-recognised, the centralised bureaucratised provision of vocational education becomes tightened and specifically focused during times of social or economic distress. This situation has led to vocational education systems becoming tightly controlled, their provisions highly ordered, and educational purposes tightly pre-specified and their means of proceeding subject to external control and management (Jackson, 1993; Stevenson, 1992). Yet, with such control has come the marginalisation and active distancing of the voices of those who practice those occupations, seek to learn and are employed as teachers (Brennan-Kemmis & Green 2013). As such, centralised measures are enacted, rehearsed and continuously reformulated in successive rounds of reforms, the standing of vocational education systems can cause dissonance and also disrupt existing relations between vocational education and those whom it serves locally (Billett 2000) falters, as does the engagement by those who are supposed to be its key objects (i.e. workplaces, students). This disruption often seems to be the case when centrally-devised procedures are enacted top-down (Billett 2002).

By degree, teachers' voices and expertise have long since been marginalised in top-down national initiatives across educational sectors, and vocational educators are not exception (Stevenson 1994). Despite the strong focus on addressing young people's education and occupational needs, students' needs and subjectivities as learners are routinely not considered. They are not seen as 'stakeholders' who are worthy of being consulted about what should be taught and how. Certainly, most educational systems have a number of stakeholders and sponsors whose interest needs to be addressed, and that there are very few instances where educational institutions are formed by individuals there alone teachers (Skilbeck, 1984). Indeed, it is difficult to identify examples of where this has occurred within vocational education, except perhaps in the early efforts of Duke of the Rochefoucault-Liacourt established in France (Troger 2002) and Victor della Vos in Russia (Bennett 1938). So, the engagement of teachers in key decision-making processes about what should be taught and allowing them to have a key voice is often not officially granted or sanctioned. Yet, as foreshadowed, it seems unlikely that their best efforts, full contributions and capacities will be exercised unless they are granted the kind of discretion to provide effective learning experiences for

the students (Skilbeck, 1984). Indeed, the domination of the industry voice within many and increasing numbers of vocational education systems is sometimes premised on the claim that educators did not understand the business of business (Billett 2002), therefore, industry has to lead this provision of education. Given that most Australian vocational educators have had extensive industry experience prior to being employed as vocational educators this seems a particularly odd claim. Such a claim also ignores the first and obvious fact that business and bureaucracy do not necessarily understand much about the business of education, but limits in their competence it does not prevent them from exercising educational decision-making, seemingly with great confidence.

However, as noted, beyond those who practice and teach, the voices of students participating in vocational education are also rarely taken into account. Increasingly, it seems bureaucratic approaches and mass educational models are ignoring bases upon which individuals become interested in their occupations, and seek to learn them. Yet, these students bring particular and diverse bases through which they engage with and participate in vocational education provisions. For instance, in a large regional vocational educational institution, some mature age women students interviewed as part of national project investigating the provision of vocational education across metropolitan, regional and remote Australian communities (Billett 2000) ⁱ. They were asked, amongst other things about their reasons for engaging in a certificate course for administrative and clerical work. They stated the for the following purposes:

A good job, which is not in a factory and pays well so I can buy a house

Partner wants to retire from train driving in 5 years' time and drive trucks. She wants to be the bookkeeper for this business.

Has been in catering for the last 10 years but was made redundant last year. She enjoyed some short computer courses and decided to work her way up the ladder.

Daughter is now in high school and will need to know how to use computer. It is important that she can show her because daughter has a learning disability.

Completed a course last year, Cert. in General Ed. for adults, and decided she wanted to do another course.

She is new to the region and hopes to meet people and get some work in office admin, even as a volunteer.

She has not been in the workforce for 20 years and wants to bring herself up to current standards and get over her fear of computers. (Billett, 2000)

Across these women's stated intentions for participation in vocational education, emerge distinct motivations, interests and trajectories. These are not singular or uniform. Nor can they be neatly aligned to national industry-advised syllabuses (i.e. industry training packages). Instead, they represent a set of personal imperatives that go beyond, although are not entirely divorced from, what the industry-led programs suggest: specific occupational competences associated with clerical work. These students and also their younger counterparts also reported being very selective about the kinds of workplaces they wanted to engage in upon graduation and, therefore, had clear intents and focuses in their preferred choices (Billett 2000). Some were directed at having access to specific forms of work that would provide particular learning outcomes, whilst others were associated with maximising their learning within the course. For instance, younger students at this site referred very specifically to the kinds of workplaces they would accept employment in and one recent graduate expressed concern that her new job drew upon only a fraction of what she had learnt in her course because the workplace did not have a computer. She was concerned about the impact of the limited work activities on her ability to use and develop further her occupational capacities. The point here is that students make decisions and exercise discretion in the educational process, including how and what they learn, and where they will seek and accept employment. Much of the outcomes of vocational education will be premised upon how they engage with the experiences provided for them. Hence, it is important that students concerns and interests are at least considered alongside those of others who have a say in what should be learnt and how.

Some premises about how to proceed

In mature vocational education systems, there is a healthy and sustained balance amongst the interests that shape those provisions (Brockman, Clarke & Winch, 2008; Deissinger 1994). Therefore, given the

enduring historical legacies and societal sentiments discussed above, it becomes necessary to consider how the organisation and ordering of vocational education provisions might best proceed to redress the interlinked challenges of sometimes low status, unnecessary regulation and prescriptive organisational structures. That is to work towards building the capacities and commitment of workplaces, potential students and nascent workers, not to mention those who teach. Consequently, in conclusion, five premises are advanced here in no particular order of priority as to how vocational education system might advance their standing and utility to students, workplaces, communities and national social and economic imperative, and,.

Firstly, there needs to be a greater acknowledgement that occupational requirements are not uniform. Beyond canonical occupational practice these requirement are also shaped by situational factors (Billett 2001). Moreover, these requirements need to be accounted for when developing educational intents, identifying and ordering experiences and content for students. These requirements together become the bases for intended curriculum (i.e. what is supposed to be learnt), shaped by but not prescriptively driving what is enacted through vocational education provisions. Hence, national prescriptions for vocational education alone are insufficient. Variations in requirements for occupational practice need to be understood and accounted for in the organisation and enactment of vocational education provisions. So, there needs to be an easing of prescriptive educational goals, instructional and assessment measures and a greater accommodation of local decision-making and discretion to identify and respond to situational needs in terms of students or occupational requirements.

Secondly, and to achieve this engagement is the need to support and accommodate local decisions about occupational requirements, students' readiness and available resources and experiences. That is, vocational educators making decisions about the detailing of educational intents to be achieved situationally and then acting locally (e.g. with students and employers – see below) in selecting and enacting the means by which these requirements can be met through engagement with local enterprises and community members.

Thirdly, and following again, those who teach in vocational education programs and institutions and support learning in workplace settings are often best placed to advise about and make decisions about how best these provisions of learning support should proceed. It is noteworthy that evidence provided in graduate student surveys (Billett & Hayes 2000) and identification of vocation students' satisfaction (Polesel, Davies & Teese 2004) both identify teachers' contributions to their learning as being high standing and central to student success in their course and subsequent employment. Their voices should be engaged with when setting out what constitutes the details of the educational intents, the content and means of assessment that is to follow. Moreover, rather than winding back commitment to vocational teacher education, there needs to be professional preparation that is commensurate with developing these capacities.

Fourthly, students and workers ultimately decide how they engage with and learn from what is provided them through vocational education. It is worth noting that educational provisions are nothing more or less than invitation to change and, ultimately, the worth of these provisions will be premised upon how students take up the invitation and engage when participating in vocational education provisions. Therefore, understanding and finding ways to engage and secure students' engagement will be central to achieving satisfaction and reducing attrition.

Fifthly, it also needs to be remembered, particularly by those who seek to regulate and make compliant educational provisions that there are three conceptions of curriculum which need to be considered through these processes. These comprise: the 'intended curriculum' – what is intended to be learnt and how (e.g. national curriculum documents); ii) 'enacted curriculum' – what is implemented or enacted (e.g. in workplaces, training rooms, vocational colleges), and the 'experienced curriculum' – what students encounter and through engaging with what is enacted (e.g. learners' interests, subjectivities). It seems that in some vocational education systems, far too much emphasis is placed on the first and too little on the second two. The 'top-down' approach to ordering vocational education, as premised upon the views of privileged others who have limited knowledge and practice denies the importance and range of factors that shapes the enactment of vocational education provisions and that these need to be understood and respond to act the local level (the enacted curriculum). As noted, such considerations extend to what constitutes effective occupational performance in the kind of circumstances that students may experience or seek employment in beyond graduation. It seems the erroneous assumptions and premises established

in Hellenic Greece have been sustained, supported and transformed by other privileged voices and this includes in contemporary times the bureaucratic ordering of vocational education. However, there is now a need for fresh considerations and organisation of vocational education that can secure the kinds of purposes which different and distinct societal groups propose for it, including those who study.

Fundamentally, to realise these kinds of outcomes suggests that a broader range of discretion by teachers, those in workplaces, and students is required to meet local circumstances. It seems these are key bases for mature and effective vocational education systems. Also, there needs to be greater consideration for the organisation and enactment of learning experiences that can develop both the canonical occupational knowledge and its situated version which are together central to the effective enactment of occupational practice. Through students and workers having the capacities to perform effectively in their roles the more likely they are to assent to these occupations becoming their vocations. Furthermore, given their centrality to vocational education, it is necessary for a greater engagement with the voices of students, to understand their needs and aspirations and to engage their energy as an efforts as learners, to moderate unrealistic expectations but, to also to assist them mediate learning experiences in vocational education effectively. Such considerations also suggest building further localised partnerships within and across communities where vocational education programs are enacted or being directed towards. This partnership building cannot be achieved by remote decision-making and nationally uniform measures. It requires building relations, confidence and shared understandings and decision-making locally (Billett 2000). Many of these qualities are present when effective and mature vocational education systems are described (Brockmann, Clarke & Winch 2008).

Of course, there are tasks that need to be addressed centrally. Some of these are far more important than attempting to control teachers' activities and learners' interests and motivations which as sometimes are seen as a priority. These tasks for central agencies include identify the canonical occupational requirements, and organising schemes that permit and support local engagement, decisions making and discretion. But, importantly they extend to elevating the standing and status of vocational education and those occupations to which its efforts are directed. Such agencies might attempt to try and build the kind of societal sentiments supporting vocational education in German-speaking countries (the berufsconcept) where such sentiments are foundations upon which its provisions are built, make individuals proud to be in that occupation, empowering educators and elevating the standing of the occupations that vocational education provisions are directed towards.

All of this is to suggest that, in the past and currently in some countries such as Australia, conceptions of occupations and vocational education have and are made by 'privileged others', yet who have little or no contact or understanding with the particular requirements of occupations being enacted, local factors such as the local manifestation of occupational practice, the needs and readiness of students and how the occupation is positioned within the local community. Hence, for vocational education to move ahead and generate responsive and effective educational provisions there should be a greater privileging of the capacities and decision-making of those who practice occupations, are teaching individuals about them and also those who are engaging in or learning about them. These are the hallmarks of mature vocational education systems.

References

Akkerman, S. F., & Bakker, A. (2012). Crossing boundaries between school and work during apprenticeships. *Vocations and Learning: Studies in vocational and professional education, 5*(2), 153-173.

Adamson, G. (2007). Thinking through craft. Oxford: Berg.

Ainley P. (1990). Vocational Education and Training. London: Cassell Education.

Aldrich, R. (1994). Vocational Education in Britain: an historical and cultural analysis. In A. Heikkinen (Ed.), Vocational education and culture -- European prospects from history and life history. Tempere: University of Tempere.

Barbieri - Low, A. J. (2007). Artisans in early imperial China. Seattle: University of Washington.

Bauman, Z. (1998). Work, consumerism and the new poor. Buckingham: Open University Press.

Baverstock, F. (1996). The effects of the implementation of Competency-based Curriculum on How Teachers do their jobs: A small scale study. Unpublished Masters Thesis. Monash University, Melbourne.

Bennett, C. A. (1938). The ancestry of vocational education. In E. A. Lee (Ed.), *Objectives and Problems of Vocational Education* (2nd ed., pp. 1-19). New York: McGraw-Hill Book Company.

- Billett, S. (1994). Situated Learning a workplace experience. *Australian Journal of Adult and Community Education*, 34(2), 112-130.
- Billett, S. (2000). Defining the demand side of VET: Industry, enterprises, individuals and regions. *Journal of Vocational Education and Training*, *50*(1), 5-30.
- Billett S & Hayes S (2000) *Meeting the demand: The needs of vocational education and training clients*. Adelaide NCVER. ISBN 0 87397 589 8
- Billett, S. (2001). Knowing in practice: Re-conceptualising vocational expertise. *Learning and Instruction*, 11(6), 431-452.
- Billett, S. (2006). Work, Change and Workers. Dordrecht: Springer.
- Billett, S. (2011). *Vocational Education: Purposes, traditions and prospects*. Dordrecht, The Netherlands: Springer.
- Billett, S., & Pavlova, M. (2005). Learning through working life: self and individuals' agentic action. *International Journal of Lifelong Education.*, *24*(3), 195-211.
- Brennan-Kemmis, R., & Green, A. (2013). Vocational education and training teachers' conceptions of their pedagogy. *International Journal of Training and Research*, 11(2), 101-121.
- Brockmann, M., Clarke, L., Mehaut, P., & Winch, C. (2008). Competence-based Vocational Education and Training (VET): The cases of England and France in a European perspective. *Vocations and Learning*, 1(3), 227-244
- Brockmann, M., Clarke, L. & Winch, C. (2008). Knowledge, skills, competence: European divergences in vocational education and training (VET) -the English, German and Dutch cases. Oxford Review of Education 14 (5)547-567
- Bourdieu, P. (1984). *Distinction: A social critique of the judgement of taste.* Boston, Harvard University Press.
- Carr, W., & Hartnett, A. (1996). Education and the struggle for democracy: The politics of educational ideas.

 Buckingham, UK: Open University Press.
- Choy, S., Bowman, K., Billett, S., & Wignall, J. (2007). Effective models of employment based training. Adelaide: National Centre for Vocational Education Research.
- Darrah, C. N. (1996). *Learning and Work: An Exploration in Industrial Ethnography*. New York, Garland Publishing.
- Deissinger, T. (1994). The Evolution of the Modern Vocational Training Systems in England and Germany: a comparative view", *Compare: A Journal of comparative education, 24*(1), 17 36.
- Dewey, J. (1916). Democracy and Education. New York: The Free Press.
- Dymock, D., & Billett, S. (2010). Skilling Australians: Lessons from World War II national workforce development programs, . *Australian Journal of Adult Learning*, *50*(3), 468-496.
- Ebrey, P. B. (1996). China: Illustrated history. Cambridge, United Kingdom: Cambridge University Press.
- Elias, J. L. (1995). Philosophy of education: classical and contemporary. Malabar, Florida: Krieger Publishing.
- Epstein, S. R. (1998). Craft Guilds, Apprenticeship, and Technological Change in Preindustrial Europe. *The Journal of Economic History*, *58*(3), 684-713.
- Ericsson, K. A. (2006). The Influence of Experience and Deliberate Practice on the Development of Superior Expert Performance. In K. A. Ericsson, N. Charness, P. J. Feltowich & R. R. Hoffmann (Eds.), *The Cambridge Handbook of Expertise and Expert Performance* (pp. 685-705). Cambridge: Cambridge University Press.
- Farrington, B. (1966). Greek Science. London: Pelican.
- Foucault, M. (2009). Security, territory, population. Basingstoke, Palgrave McMillan.
- Frommberger, D., & Reinisch, H. (2002). *Development of disparate structures of Dutch and German vocational education*. Paper presented at the Towards a history of vocational education and training (VET) in Europe in a comparative perspective, Florence.
- Gonon, P. (2009a). 'Efficiency' and 'Vocationalism' as Structuring Principles of Industrial Education in the USA Vocations and Learning: Studies in vocational and professional education., 2(2).
- Gonon, P. (2009b). The quest for modern vocational education: Georg Kerschensteiner between Dewey, Weber and Simmel (Vol. 9). New York: Peter Lang.
- Green, A. (1994). Technical Education and State Formation in Nineteenth-Century. In A. Heikkinen (Ed.), *Of vocational Education and Culture -- European prospects from history and the life history* (pp. 67-90). Tempere: University of Tempere.

- Greinert, W. D. (2005). Vocational education and training in Europe: classical models of the 19th-century and training in England, France and Germany during the first half of the 20th. Luxembourg: Office for Official Publications of the European European Communities.
- Greinhart, W.-D. (2002). European and vocational training systems: the theoretical context of historical development. Paper presented at the Towards a history of vocational education and training (VET) in Europe in a comparative perspective. Vol1, 17-27, Florence CEDEFOP.
- Hanf, G. (2002). *Introduction*. Paper presented at the Towards a history of vocational education and training (VET) in Europe in a comparative perspective, Florence.
- Heikkenen, A. (2002). Can European policy draw on models of vocational education? Paper presented at the Towards a history of vocational education and training (VET) in Europe in a comparative perspective, Florence.
- Hillmert, S., & Jacob, M. (2002). Social inequality in higher education; Is vocational training a pathway leading to or away from university? *European Sociological Review*, *19*(3), 319-334.
- Hyslop-Margison, E. J. (2001). An assessment of the historical arguments in vocational education reform. Journal of Career and Technical Education, 17(1), 23-30.
- Imants, J., Wubbels, T., & Vermunt, J. D. (2014). Teachers' Enactments of Workplace Conditions and Their Beliefs and Attitudes toward Reform. *Vocations and Learning, 7*(1).
- Jackson, N. (1993). If competence is the answer what is the question?' Vol.1, no.1, pp.46-60. Australian and New Zealand Journal of Vocational Education Research, 1(1), 46-60.
- Jary, D., & Jary, J. (Eds.). (1991). Collins Dictionary of Sociology (2nd Edition). Glasgow: Harper-Collins.
- Kincheloe, J. L. (1995). *Toil and trouble: Good work, smart workers and the integration of academic and vocational education*. New York: Peter Lang.
- Kosslyn, S. M., Thompson, W. L., & Ganis, G. (2006). *The Case for Mental Imagery*. Oxford: Oxford University Press.
- Lodge, R. C. (1947). Plato's theory of education. London: Kegan Paul, Trench, Trubner.
- Moodie, G. (2002). Identifying vocational education and training. *Journal of Vocational Education and Training*, *54*(2), 249-266.
- Noon, M., & Blyton, P. (1997). The realities of work. Basingstoke, Hants: Macmillan.
- Organisation for Economic Co-operation and Development. (2006). Live longer, work longer: A synthesis report. Paris: OECD.
- Parry, G. (2009). Higher Education, Further Education and the English Experiment. *Higher Education Quarterly*, 63(4), 322-342.
- Portal, J. (Ed.). (2007). The First Emperor; China's terracotta army. London: The British Museum Press.
- Polesel, J., Davies, M., Teese, R. (2004). Course completion and instructional experience in TAFE / Adelaide, National Centre for Vocational Education Research.
- Quicke, J. (1999). A curriculum for life: Schools for a democratic learning society. Buckingham: Open University Press.
- Sanderson, M. (1993). Vocational and liberal education: a historian's view. *European Journal of Education,* 28(2), 189-196.
- Sennett, R. (2008). *The Craftsman*. New Haven & London: Yale University Press.
- Sloane, P. F. E. (2004): The Application Transfer between School and Enterprise in the German Dual System putting it into practice. In: Mulder, Regina / Sloane, Peter F. E. (Eds.) (2004): New Approaches to Vocational Education in Europe. Oxford 2004: Symposion Books, 143 156.
- Skilbeck, M. (1984). School based curriculum development. London: Harper and Row.
- Stenhouse, L. (1975). An introduction to curriculum research and development. London: Heinemann.
- Stratmann, K. (1994). Learning in the vocational education -- a historical analysis on the change of paradigm in vocational education, based on selected documents (A. Heikkinen, Trans.). In A. Heikkinen (Ed.), Vocational Education and the Culture: The European Prospects from history and life history.

 Tempere: Tempere
- Stevenson, J. C. (1992). *Contradictions, Complications and Competencies: Who cares?* . Paper presented at the Student services Bridge to success a TAFE national conference on student services. , Brisbane, Queensland.

- Stow, D. (1847). *National education : the duty of England in regard to the moral and intellectual elevation of the poor and working classes, teaching or training?* London: J. Hatchard,.
- Tafel-Viia, K., Loogma, K., Lassur, S., & Roosipõld, A. (2012). Networks as Agents of Innovation: Teacher Networking in the Context of Vocational and Professional Higher Education Reforms. *Vocations and Learning*, *5*(2), 175-193.
- Troger, V. (2002). *Vocational training in French schools: the fragile State-employer alliance.* Paper presented at the Towards a history of vocational education and training (VET) in Europe in a comparative perspective, Florence.
- Vähäsantanen, K., Hökkä, P., Eteläpelto, A., Rasku-Puttonen, H., & Littleton, K. (2008). Teachers'
 Professional Identity Negotiations in Two Different Work Organisations. *Vocations and Learning,* 1(2), 131-148.
- Vahasantanen, K. and S. Billett (2008). Negotiating professional identity. *Emerging perspectives of workplace learning*. S. Billett, C. Harteis and A. Eteläpelto. Rotterdam, Sense Publishers: 35-50.
- Wärvik, G.-W. (2013). The reconfiguration of adult education VET teachers: Tensions amongst organisational imperatives, vocational ideals and the needs of students. *International Journal of Training and Research*, 11(2), 122-124.
- Willett, J., & Hermann, G. (1989). Which occupational analysis technique: Critical incident, DACUM, and/or information search? . *The vocational aspect of education, 41*(110), 79-88.
- Winch, C. (2004). What do teachers need to know about teaching? A critical examination of the occupational knowledge of teachers. *British Journal of Educational Studies*, *52*(2), 180-196.

i Details of the method and procedures of this study are reported in Billett S (2000) Defining the demand side of VET: Industry, enterprises, individuals and regions. *Journal of Vocational Education and Training*, 50 (1) 5-30