

Transformation of work, vocation, and education in an international perspective

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Workplace learning: Historical evolution and socio-cultural distinctiveness

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### Abstract

This essay complements the focus on history and historical development of vocational education that is a strong feature of Philipp Gonon's contributions to the broad field of learning for work. It discusses the development over time of the concept of workplace learning. Whilst the development of this concept has many similarities across countries there are distinct and diverse characteristics, much of these directed by particular societal sentiments. The case made here is that, across most of human history, learning at the site of occupational practice and through engagement in work tasks (i.e., workplace learning) has been, by far, the most commonest and ubiquitous means through which humans have developed the skills required to meet personal, their communities and nations' social and economic goals. Until the era of modernity, very few occupations were prepared for through educational programs (e.g., medicine, law). For most occupations, local workplaces were the principal and most common circumstance for learning occupational skills and advancing innovations. In schooled societies, however, the practice and privileging of occupational preparation and advancement through educational institutions and experiences has become ubiquitous. Even with the recognition that such experiences alone are insufficient to develop applicable occupational knowledge, and those in workplaces are also required they are held to be subordinate to experiences in educational programs and institutions. The case made here is for the salience and contributions of workplace learning experiences and how are positioned within societal sentiments about the initial preparation and ongoing development of occupational capacities. That positioning needs to be embraced by a broader societal sentiment about occupational learning, rather than education.

### **Workplace learning**

The case made in this essay is that what is referred to as "workplace learning", its standing and relevance, has evolved over human history and is diverse and distinct across cultures. So, whilst processes and means of supporting that learning have much commonality across countries and sociocultural contexts, there are distinctive societal sentiments positioning these learning experiences in ways that can either hinder or support their standing as legitimate and worthwhile educational experiences. This essay sets out to understand how conceptions of "workplace learning" have evolved from, firstly, being the most ordinary and accepted everyday process through which individuals learnt their occupational capacities and across many countries to, secondly, being seen as less worthy and legitimate than what occurs and are the products of educational institutions through to, thirdly, current conceptions that learning experiences in workplaces can provide important contributions to educational programs and the processes and outcomes of what educational institutions seek to achieve. Yet, whilst valued in some cultural contexts, these experiences are less valued in others. Central here is understanding societal sentiments to learning through work that are often informed by societal elites.

So, there is also a need to consider how conceptions of and the valuing of “workplace learning” are shaped by cultural practices, occupational hierarchies, and the kinds of knowledge needed to be learnt. Beyond curiosity, the evolution, diversity and transformation of understandings about what constitutes workplace learning and its worth is salient now more than ever. These understandings are now being embraced by and integrated into the broader educational discourse, which shapes how these experiences are resourced, deemed worthwhile and worthy of societal investment, and seen as legitimate, or otherwise.

#### Workplaces as sites of learning occupational practice: evolving and differentiated discourses

This essay proposes that learning through work (i.e., workplace learning) has in the past, is currently, and is likely in the future to remain central to (a) individuals’ occupational learning and development, (b) human progress, and (c) the further development of culturally derived practices (i.e., occupations). In this era of schooled societies (i.e. where schooling is compulsory, and lengthy) it is necessary to remind that, across human history, the vast majority of occupational skills needed to sustain and advance human existence and to meet human needs have been learnt through participation in work activities, not through participating in educational programs or teaching. Prior to the eras of industrialization and modernity, not only did most of humanity learn the capacities required to practice these occupations through workplace activities and interactions, but also their remaking and transformation arose there (Billett, 2014b). Only in relatively recent times (i.e. since the formation of modern states and industrialization have there been educational provisions for the broad range of occupations existing today (Hanf, 2002). These provisions often arose from imperatives associated with societal stability and also from addressing the loss of family and local businesses as sites of occupational preparation (Gonon, 2009). Yet, with the advent of schooled societies that emerged from modernity, the formation of modern nation states, and industrialization, learning in and through work has become positioned as subordinate to and less worthy than those experiences in educational institutions. Indeed, workplace learning has been referred to in negative terms (i.e., informal – without form, incidental – haphazard; Marsick & Watkins, 1990) and its outcome as the opposite of what is purported to arise from schooling experiences (i.e., concrete outcomes – not transferable). While such descriptions overlook key critiques of the ability of what is learnt in educational institutions to be adapted to other circumstances (Lobato, 2006), this kind of unquestioned assumption demonstrates the power of societal sentiments about educational provisions, even when they are erroneous. It seems that, in schooled societies, the absence of teachers and educational institutional practices, means that rich and adaptable learning is inconceivable, leading to such experiences being seen to lack quality and legitimacy (Billett, 2002).

However, there is now a growing realization that learning experiences in educational settings alone, either in actual or virtual manifestations, are insufficient to develop the kinds of capacities required for occupations and, therefore, that workplace experiences are a necessary element of occupational preparation (Boud, Solomon, & Symes, 2001; European Training Foundation, 2012). This is leading to a reappraisal of the contributions of workplace-based experiences for learning the kinds of knowledge required for specific occupations and work life more broadly (Organisation for Economic Co-operation and Development, 2010). This recent embrace of workplace experiences progresses in awkward and qualified ways, and with constant references to experiences in workplaces being described erroneously as ‘informal learning’ (Billett, 2010). Regardless, there is now a more sympathetic, engaged, and considered conception of workplaces as environments in which students and workers alike can learn worthwhile knowledge. That is, the discourse about and societal sentiments associated with

workplace learning experiences have become more invitational and accepting, albeit still mainly when viewed as an adjunct to those experiences in tertiary education programs (Cooper, Orrel, & Bowden, 2010; Eames & Coll, 2010).

Importantly, across human history, it has been societal elites (aristocrats, theocrats, and bureaucrats) whose views about occupations and their mode of preparation have influenced this discourse (Elias, 1995) and those societal sentiments (Billett, 2011), albeit in culturally distinct ways. These views were rarely informed by the insights and perspectives of those practising the occupations, and often appear as mere rehearsals of societal prejudices. Lodge (1947) suggests that Plato's views were shaped by his aristocratic upbringing, for instance. These views include considering that the lowest form of education was required for those who worked with their hands (and not with their minds; i.e., artisans and artists). He used the term *technē* – to make – derogatively to describe low-level work and workers with limited capacities that only had the need for the most basic preparation (Elias, 1995). Such sentiments appear to have been widely accepted. Even today, the development of national standards and curricula for vocational education are often informed by people speaking on behalf of those who practise the occupations (i.e., industry representatives), presumably because these others know better than those who practice (Billett, 2011). One the most commonly used processes for developing syllabus for vocational education, the DACUM process (i.e., develop a curriculum), is premised on the contributions of spokespersons for those who conduct the work. So, the voice of those who practise and process understandings about the circumstances of practice are often excluded from such deliberations.

Because of contemporary concerns about employability, workplace experiences are now becoming more central elements of tertiary educational provisions, however. These experiences are being included and integrated in many such programs (Billett, 2015). Therefore, it is necessary to have a more informed and impartial societal sentiment informing educational deliberations about their contributions, worth, and integration in educational programs (Billett, 2009). Importantly, it is necessary to view these settings and environments afresh and in ways different from premises and conceptions framed by the discourse of schooling and educational institutions. That is, for workplaces to be positioned as learning environments in their own right to avoid them being positioned as adjunct, posterior, or subordinate to what is afforded by educational provisions and institutions. Instead, workplaces need to be viewed and positioned as physical and social environments in which situated manifestations of occupational practices are enacted through situationally authentic activities and interactions to be engaged in by students and workers alike to learn initially and develop further their occupational capacities. Yet, at the same time, it is salient to refer to practice curriculum and practice pedagogies and central role of learners' (i.e., workers and students) personal epistemologies. These concepts from educational theory are helpful in legitimating such experiences. To liberate current conceptions from prevailing, aged, and ill-informed perceptions (e.g., workplaces as informal learning environments with concrete outcomes) it is necessary to set out something of how conceptions of learning through work have arisen and been transformed.

#### Learning through work: Evolution of a concept

The era of modernity, with industrialization, the formation of modern nation-states, establishment of mass education systems and development of nascent vocational education systems, was a key moment in the evolution of how workplaces are conceptualized as places to learn. As foreshadowed, up until then, for the vast majority of workers across human history, sites of work were ordinarily and the sole places where occupational skills were learnt (Billett, 2014b; Roodhouse, 2007) and occupational

innovations generated (Epstein, 2005). That learning and innovation largely occurred within family businesses or local enterprises (Greinert, 2002; Snell, 1996), sometimes through formalized arrangements associated with engagement in work and learning in particular workplaces (i.e., apprenticeship); Aldrich, 1999; Bennett, 1938). That learning seemingly mediated by two processes: (a) engagement in the everyday activities of the family, business, or community; or (b) some structured arrangement, such as apprenticeship. These are now briefly discussed in turn.

### *Learning through engagement in everyday life*

The most common means for the learning of occupational capacities across human history has been through individuals' immersion in the everyday practices of the community (Brown, Collins, & Duguid, 1989; Jordan, 1989; Rogoff, 1990). That immersion engaged individuals in the community's goal-directed activities that is generative of learning through deciding what action to take, conducting, monitoring, refining and evaluating their progress and success. More than these activities, workplaces afford physical and social environments that assist cognition (i.e. recall, utilization and linking of knowledge structures). There are often other workers to be observed and provide models for mimetic learning (i.e., observation, imitation, and practice); artefacts, such as half-completed tasks, that together provide bases for understanding performance goals. Collectively, these resources assist and aid cognition (Scribner, 1984; Scribner & Beach, 1993) through engaging in the circumstances where (a) the knowledge needing to be learnt is utilized, (b) it is potentially made accessible, and (c) the physical and social context affords opportunities for engaging with and learning that knowledge. These activities press learners to understand the goals for the activity and through what means those goals are to be achieved and for what purposes. Supporting this learning is the presence of artefacts (Lave, Murtaugh, & de la Roche, 1984), half-completed jobs (Makovichy, 2010), and others means to model desired outcomes and monitor progress (Scribner, 1984). Anthropologists and others report these processes occurring in Europe (Hanf, 2002), China (Barbieri-Low, 2007; Gowlland, 2012), the Middle East (Marchand, 2008), India (Menon & Varma, 2010), and Japan (Singleton, 1989). Prior to modernity and industrialization, as noted, most of this learning was realized within family or local small business and was also about continuity of the family business. This appears to be the case for learning occupations in Europe (Greinert, 2002; Snell, 1996) and in other communities, such as nomadic herders of Kyrgyzstan (Bunn, 1999). In these circumstances, learning occupational roles and capacities occurred ordinarily through engagement in the family or community activities. Bunn (1999) refers to young people in Kyrgyzstan learning to ride horses, catch and skin animals, produce milk and cheese from herded animals, and understand the need for and processes of moving herds of yaks as part of their lives in this community. Their participation and learning of tasks were mediated by their gender and, most likely, positioning. Yet, in some situations, just being born into the family was insufficient. Instead, the young person had to indicate their interest in and willingness to engage in learning the occupation (Singleton, 1989).

With a few exceptions, there is little evidence, that their learning was assisted by direct interaction (i.e., instruction) by more experienced practitioners. The recorded exceptions are the few instances of "hands-on" being referred to in learning to be a potter (Gowlland, 2012; Singleton, 1989). It is clear that the predominant method of learning was through mimesis or mimetic learning (i.e., observation, imitation, and practice; Billett, 2014a). That is, it was a process of the novice learning in an active and focused way, rather than being taught (Webb, 1999).

The key point here is that this learning arose through the ordinary participation in everyday activities of the families, local business, or communities that both utilized and relied on the knowledge that was accessed and actively learnt through novices' engagement in work. Yet, sometimes the required skills could not be learnt through the available activities, as they could not be accessed, or workplace requirements did not permit or was not conducive for that learning to occur. In those circumstances, intentional structured activities are required.

### *Intentionally structured activities*

Learning through participation and immersion in particular cultures of practice (Brown et al., 1989) stands as the most ordinary and common means by which these skills were and are learnt. Yet, there has been a long-recognized need for learning experiences to be intentionally organized and structured so that what cannot be learnt through the available everyday experiences. For instance, Bunn (1999) found that some skills could not be learnt within nomadic families. It was necessary for young people to live with families who were blacksmiths, yurt makers, and storytellers, and be apprenticed to them. There were also apprenticeship that parents would organize for their children through a contract for them to live in the crafts person's house, almost as a member of the family, and to learn the master's craft (Aldrich, 1999; Snell, 1996). Sometimes societal purposes were exercised through these apprenticeships such as those for young people who were orphaned or discarded by parents and who became the responsibility of local municipalities and they were apprenticed to avoid them becoming a burden on those communities (Snell, 1996).

These traditions of apprenticeships have continued over centuries and take different forms, such as the combination of craft and religious preparation required within Jewish communities (Bennett, 1938). Whilst there is often a strong focus on the recent models of apprentice practiced in the German dual system and Swiss version with its third space, these are not commonly adopted (e.g. in countries to their north, south, east and west). It is often forgotten that across human history apprenticeship has largely been a mode of learning, not an educational model (Billett, 2016), as adopted in countries such as Germany, Switzerland, UK and Australia. For instance, traditional apprenticeships are practised contemporaneously, in Middle Eastern countries (International Labour Organisation, 2015; Marchand, 2008) where there are estimated to be far more young people engaged in "traditional" apprenticeships than in "modern" arrangements organized through educational systems and modelled on what occurs in Europe (UNESCO, 2018). An exemplar of these apprenticeships is provided by Lave (1990) in her studies of learning tailoring, and also in the learning of other crafts (Chan, 2013; Gowlland, 2012; Lancy, 2012; Marchand, 2008). That is, as a sequencing of activities shaped by occupational practice's requirements (e.g., the process of garment making) and those of the workplace (e.g., access to a pottery wheel to learn) (Gowlland, 2012; Singleton, 1989).

As is the case with learning through immersion in the family or community, the process of learning as apprenticeship is premised on learners' active engagement. The origins of the word apprenticeship is 'to apprehend' – that is, for the apprentice to take or seize the knowledge (Webb, 1999). It is their job to engage intentionally and actively to learn the required knowledge, not to expect it to be given to them (i.e., taught). In a study of apprentice masons learning to build minarets in the Middle East, Marchand (2008) notes apprentices having to "steal" the knowledge, because it is not made available to them. Instead, they need to manage their relationship with the masons and physically position themselves so that they can learn mimetically. Similarly, the Japanese term for learning through observation (minarai, literally, "one who learns by observation"), is complemented by a term referring

to learning unobtrusively through observations (minarai kyooiku; Singleton, 1989). The apprentices position themselves to observe and learn from the potters, without intruding. It is within studies of these apprenticeship arrangements that some of the few instances of direct support for learning (i.e., instruction) can be found. As mentioned, there are references to experienced potters placing their hands over those of apprentices to help them to get the feel for shaping pots on the pottery wheel (Gowlland, 2012; Singleton, 1989). There are also references to using artefacts to assist learning: for instance, in Micronesia, the process of learning to navigate by stars assisted by the use of pieces of flotsam on beaches being used to represent the positioning of stars (Pelissier, 1991).

These processes have been adopted across human history and diverse cultures for developing occupational skills. It is also not just an issue of scale that brought about changes characterized by modernity (e.g., industrialization, formation of modern nation-states, and development of education systems). Imperial China had vast populations, large cities, and elevated technological, aesthetic, and societal needs to fulfil, long before the same occurred in Europe (Ebrey, 1996). The mass production of coins, paper money, pottery and porcelain, houses, weapons, and other items occurred very earlier here. It relied on models of work organization permitting tasks to be undertaken and were also learnt through work (Barbieri-Low, 2007; Ledderose, 2000). The indicators suggest that it was the organization of work and mimetic processes of learning that have secured such outcomes over millennia (Barbieri-Low, 2007).

Yet, in China as in other countries and across eras (e.g., Hellenic Greece) and into modern societies, it has been societal elites that have promoted discourses about work and its learning and, as proposed above, much of this occurred without engaging those who practise those occupations. These discourses have led to societal sentiments that have positioned workplaces as sites of learning in different ways and times. So, in considering the evolution of concepts of workplace learning it is necessary to include a consideration of sources and characteristics of some of these societal sentiments.

#### Societal elites: Occupations and learning through practice

Across human history, social elites have shaped this societal discourse about occupations and the ways in which they can be learnt (Billett 2011). For instance, as noted, in Hellenic Greece, Aristotle and Plato (Elias, 1995; Lodge, 1947) were scathing about the worth of many occupations, those who conducted them and viewed processes of learning those occupations through their practice as evidence of their low status. The tasks artisan conducted were considered of low worth by societal elites, and those enacted them were held to have limited capacities and lacked the ability to innovate. Plato claimed that nature gives the increase, not the worker: that is, they were incapable of innovation (Lodge, 1947). Seemingly, these desirable work qualities were reserved for freeborn Greek males living in a society dependent on the work of slaves (Elias, 1995). Such views were not restricted to Hellenic Greece: in the Roman Empire, similar sentiments were expressed by Cicero (Barbieri-Low, 2007). Such aristocrats influenced the societal sentiment about occupations' standing and worth and their means of learning.

Across history, theologians have also exercised their beliefs about what constitutes worthy forms of work and in what God's eyes should be valued and supported (Dawson, 2005) and these beliefs have also been powerful and influential. These influences have, in more recent times, been exercised by elite classes and bureaucrats. Modernity and industrialization opened access to occupations previously reserved for the children of elites. Concerns about social mobility that might displace these elites or their children, led to institutionalizing occupations through professional bodies and mechanisms, regulating access through educational programs, thereby restricting this mobility, and preserving the

dominance of those elites. Hence, with the rise of new professions, requirements for educational provisions and licensing became mechanisms through which access to these occupations could be managed in the interests of the sons and daughters of the middle class and wealthy (Elias, 1995). For example, liberal education provided a pathway for middle-class children to find clean work in the public service, diplomacy, or clergy. A distinction thereby grew between work that was perceived to be clean and that which required physical work and applications requiring engagement with the brute world. It follows then that, with some notable exceptions (e.g., medicine), the preparation for these new professional occupations often proceeded without experiences in workplaces, whereas those that featured such skills (i.e., dirty work, trades work, nursing) could be prepared in workplaces.

In recent times, sentiments about and mechanisms for occupations and their development have also been shaped by bureaucracies and bureaucrats. Bureaucracies took over the control of ancient guilds in countries such as Germany (Gonon, 2006), and the organization and regulation of occupations has increasingly come under their control, including professional associations. The mechanisms adopted by such bodies are to use regulatory means to control favouring what is quantifiable and measurable. Hence, the establishment of national occupational standards and uniform curricula is used to regulate and mandate what needs to be taught and assessed for the authorization to practice. Yet, rather than occupations being practised uniformly across workplaces within countries, there is diversity in the circumstances of practice and requirements for performance, problem-solving required, and what constitutes effective solutions (Billett, 2001). Yet, such variations do not fit well within bureaucratic schemes. Noteworthy here, is that bureaucratic measures associated with educational provisions (e.g., numbers of students, time spent in classrooms, provision of materials) are easily calculated and regulated. However, processes of learning in and through working cannot be so easily administered. So, administrative limitations and reach position learning in and through work as being problematic for bureaucratic models.

Finally, academics and educators have done much to marginalize forms of work viewed as low status and as having limited requirements (Oakeshott, 1962), usually not on the basis of evidence, and this has implications for learning through work. For instance, Stenhouse (1975) suggested behavioural forms of education should only be used for developing the occupations being prepared for through vocational education. He suggested that such narrow, pre-specifiable, and measurable outcomes were pertinent to those occupations, but not to general or higher education. By implication, such forms of learning are relatively easy and not worthy of high levels of education as they can be learnt through work experiences. Yet, academics have also and almost ubiquitously come to refer to those experiences as informal (Eraut, 2004; Marsick & Watkins, 1990) and non-formal (Smith & Clayton, 2009) as they are not organized through a syllabus and they occur without direct interventions of educated teachers. Yet, this ignores what anthropologists have reported consistently over the last 50 years at least; that is, the structuring of experiences in workplaces for novices often arises through deliberate sequencing of activities along which they have to progress, based on the exigencies of practice. Hence, they conform to the original definition of curriculum: the path to progress along, the track to follow. Anthropologists have also identified pedagogic practices (Lancy, 2012; Pelissier, 1991) and bases of engagement for learners in workplaces (Lancy, 2012; Singleton, 1989) that have well served these occupations and position novices as active and intentional learners (Webb, 1999). So, rather than dismissing workplace learning experiences as being informal and non-formal, much of what occurs in workplaces can be equated to foundational requirements of effective educational provisions: an organized set of experiences; a means for enriching those experiences and having learners engage with them.

Hence, the views of aristocrats, theocrats, bureaucrats, and academics about what constituted worthwhile work, occupations that needed to be learnt through work being of low status and low requirements have been privileged. This has positioned learning through work as being largely restricted to lower kinds of work that requires little higher order thinking and decision-making. Of course, the strong focus on practice-based learning in health care and particularly in medicine contradicts such sentiments. It is perhaps not surprising, therefore, that conceptions of workplaces being 'informal learning environments', in which ad hoc learning arises and that this learning is often viewed as being concrete (i.e., not applicable beyond the circumstances of its acquisition) abound. There is a need now to go beyond these negative terms and view workplaces as learning environments in their own right. Moreover, the kinds of societal sentiments referred to above differ and are distinctive across different cultures.

#### Distinctiveness across cultures

As proposed above, societal sentiments perpetuated by elites, shape how learning through work is viewed and supported in particular communities, societies, and nation-states. However, these sentiments and their consequences differ across countries and societal sentiments. For instance, in Germany and the German-speaking world, there is a strong commitment to the development of craft skills and also concepts associated with that development – the *Beruf* concept. The *Beruf* concept of occupation includes a recognized body of knowledge associated with its enactment, but also a sense of worker identity (Winch, 2004). This concept is accepted and supported within German society where the development of skills is viewed as an important and worthwhile societal, workplace, and individual investment (Deissinger, 1994). This leads to societal sentiments such as German enterprises being expected to provide comprehensive and effective skill development for apprentices, on the one hand, whilst the apprentices and their parents accept a low level of payment for apprentices. The importance of developing skills in the workplace is exemplified through the German concept of the *Meister* (i.e., a skilled and experienced practitioner who also has pedagogic skills) which is widely accepted as being a requirement for workplaces employing apprentices (Deissinger, 2002). These arrangements are supported and promoted by employer associations and unions and managed locally by chambers of commerce which operate in a bipartisan way and are empowered by government. So, this societal sentiment places expectations on employers to provide effective work-based learning for apprentices, on young people and their parents to accept a low-level training wage, and for these arrangements to be supported by *meisters* and managed by local chambers of commerce who act in a non-partisan way to promote the development, assessment, and certification of these skills (Deissinger, 1996). Importantly, this powerful societal sentiment positions the workplace as a central source of that learning.

However, in France quite a different sentiment exists. As a product of French republicanism there is a sentiment that seeks to decouple work and education, a feature of the French Revolution to overcome usurious and injurious work conditions and situations that subjugated rather than liberated French workers. Hence, work is seen as potentially harmful and as something that should be only cautiously associated with education (Troger, 2002). Whereas in Germany, with the abolition of feudal arrangements, as mentioned, the guilds were taken over by the state, in France the guilds were associated with the Ancient Regime and dealt with summarily. Hence, there was a cessation of institutions regulating and supporting the development of skillful work there. In addition, French republicanism championed decisions about employment being made on merit, rather than on the



circumstances of birth. This means that access to education should be open and that educational achievement is the key measure for employment and progression. So, there is strong focus on academic achievement: success or otherwise in educational programs (Veillard, 2015). Ryan (1999) makes the point that in Germany, apprenticeships were a route to a *Beruf*, but in France it would have to lead to a profession to be deemed worthy. The French republican sentiment privileges learning in and for educational programs above the kinds of capacities required for and learnt in workplaces. Hence, it has been difficult to develop sustainable apprenticeship systems in France unless there are significant financial incentives and support from government.

So, there are cultural differences shaping perceptions of the worth of occupations and, importantly, the means by which those occupations are to be learnt, including the role of workplace experiences in these arrangements. So, although the alternance approach (i.e., combining education and work) exists in the Francophone world, it is seen as being low status and is not championed as are apprenticeships in Germany (Veillard, 2015). This extends to restrictions on recognition of prior learning, as this is seen to be undermining the status of examinations. Such sentiments are not just linked to European countries. In a recent UNESCO-UNEVOC project that gathered perceptions about work-based provisions from countries across the globe (UNESCO, 2018), it was found almost universally that the standing of vocational education was low when compared with higher education. Moreover, the association with learning in workplaces was seen to relegate further the standing of vocational education. That is, it was linked to occupations that were low skill, dirty, and of low social status; making them unattractive to young people and their parents. These sentiments were consistently expressed by informants from Africa, the Middle East, Asia, the Caribbean, and European countries in a separate project (UNESCO-UNEVOC, 2018).

There are also historical legacies that play out in different ways across countries. In the United States in the debates leading to the Smith-Hughes act in 1917, it was decided that the apprenticeship model that was being championed in Germany and Russia was not feasible there (Garrison, 1996). Faced with the prospect of hundreds of thousands of young fit men with no occupational skills returning from Europe at the conclusion of World War I, it was concluded that American enterprises lacked the capacities and interest in the apprenticeship system. Consequently, the model of vocational education adopted there was to be one based largely in educational institutions (i.e., community colleges). Indeed, apprenticeships as they exist in America are largely based on the actions of labour unions rather than of the state (Worthen & Berchman, 2010). Fifty years later, the newly formed nation-state of Singapore also concluded that its workplaces lacked the capacity and maturity to support an apprenticeship system, also deciding on a model of vocational education premised in postsecondary educational institutions (i.e., polytechnics and the Institute for Technical Education). In both America and Singapore there are also concerns about broader educational goals not being achieved through vocational education and these were not seen to be realized through workplace learning experiences. Two other reasons apprenticeships were introduced in Germany during industrialization was to engage young people in responsible roles and to work within the state through being responsive to societal mores and practices (Gonon, 2009), and this would distract them from being attracted to socialism and threatening the nascent German state.

So, not only have the standing of and views about learning through work (i.e., workplace learning) evolved over time, but they also have quite different emphases in different nation-states which shape how they are seen as environments in which to learn and how they are engaged with by the state, education systems, and young people.

### **Conceptions of learning through work**

To conclude, the conceptions about and the standing of workplaces as environments in which to learn occupational skills have evolved over time, often shaped by the sentiments of elites whose views are shaped by their own interests, experiences and standing. These societal sentiments have done much to shape perceptions about, engagement with, and optimizing of workplaces as environments in which to learn. Contrarily, at the level of practice – those circumstances and those individuals who possess occupational capacities and who assist others to learn them – the value of workplace experiences is often unquestionable. More broadly, within the community the importance of workers performing tasks in which the consequence of failure are high (i.e., doctors, nurses, airline pilots, pharmacists) would be unthinkable that they would be prepared for these occupations without extensive periods of practice-based experiences. Indeed, despite claiming the lowest forms of work were to be informed by practice, thereby dismissing the work of artisans and artists (Elias, 1995), Plato made much of the importance of practice and personal experience of health in the development of physicians' skills:

The best physicians are those who have treated the greatest number of constitutions good and bad. From youth up they have combined with the knowledge of their art the greatest experience of disease. It is better for them not to be robust of health themselves, but to have had all manner of diseases in their own persons. For it is not with the body, but with the mind, that they cure the body. And thus they infer the bodily diseases of others from the knowledge of what has taken place in their own bodies. (Lodge, 1947, pp. 42-43)

However, countering this is a perennial sentiment in 'schooled societies' that legitimate and worthwhile learning can arise only through experiences in educational settings as directed and guided by teacher. These institutions and instructors are themselves are guided by syllabuses and national occupational standards with imprimaturs of government and professional bodies. However, promoting considerations of workplaces as learning environments, is not to denigrate or deny the importance of experiences in educational settings and the role of teachers. Instead, it addresses broader concerns within the educational project about the alignment between educative experiences and the knowledge to be learnt. It is important to move away from the belief that workplace experiences are limited to procedural development and their consequences are informal, concrete, and ad hoc. This may be the case, but it is neither necessary nor likely. Instead, the development of conceptual and dispositional knowledge associated with occupations also arises through these experiences (Billett, Harteis, & Gruber, 2018). The learning or formation of this knowledge often occurs in different ways, by different degrees, and with different kinds of outcomes from participation across workplaces. Nevertheless, much rich learning arises through these experiences, as is attested by what has occurred across human history in terms of the continuity and evolution of occupational capacities and innovations. So, it seems necessary to consider more objectively workplaces as learning environments. That is, to appraise how those experiences (i.e. activities and interactions afforded by workplaces) can be effectively engaged with and learnt from by students and workers, and how those experiences can be positioned in the provision of educational support for initial occupational preparation and continue to support learning across working lives. However, this can only come about when workplaces are understood and acknowledged as learning environments on their own terms, rather than through the educational discourse of schools and teaching. All of this discussion fits within the ambit and scope of what constitutes Philipp Gonon's field of research and contributions over the last four decades.

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