Higher Education and the Debate on Key/Generic Skills

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Abstract

This article addresses current questions about the importance of key/generic skills in higher education, based on a Meta-evaluation methodology. It is argued that key skills are a matter of debate among educators and other researchers in the neo- and post-Ford economy. The article also analyzes questions that relate to the rationality of key/generic skills, such as whether these skills are occupationally or professionally specific, whether they are professionally or organizationally specific, and how they can be transferred or taught in higher education. The authors' findings reveal

Résumé

Cet article adresse des questions actuelles sur l'importance des habiletés clés / génériques au niveau des études supérieures, basées sur une méthodologie de méta-évaluation. Les auteurs avancent que les habiletés clés sont un sujet de débat parmi les éducateurs et les autres chercheurs oeuvrant dans la néo-économie et l'économie après Ford. Ils abordent également des questions concernant la rationalité des habiletés clés / génériques, comme de déterminer si ces habiletés sont spécifiques à une profession ou un organisme ou la manière dont elles peuvent se transférer ou s'enseigner

that, first, key skills are specific to particular social domains and, second, there are strategies in line with Bridges's distinction of transferable and transferring skills that can be employed to transfer key skills. Also with regard to key/generic skills, the authors assert that there are ranges of preparatory work to be done in higher education or other educational institutions and that fluency can only be achieved through practice in specific contexts. The limitation of these findings is that there remains a high degree of indeterminacy because the "generic" elements that are taught in higher education must still be applied in a wide range of different contexts.

au niveau des études supérieures. Les résultats des auteurs nous révèlent que, d'abord, les habiletés clés sont spécifiques à certains domaines sociaux, et ensuite, qu'il existe des stratégies s'alignant avec la distinction que fait Bridge sur les habiletés transférables et le transfert des habiletés pouvant servir au transfert des habiletés clés. Aussi, par rapport aux habiletés clés / génériques, les auteurs avancent-ils la nécessité de faire divers travaux préparatoires au niveau des études supérieures ou dans d'autres établissements éducationnels, et que la facilité s'atteint par la pratique en contextes spécifiques. La limitation de ces résultats est qu'il reste un grand degré d'indétermination parce que les éléments « génériques » enseignés au niveau des études supérieures doivent encore s'appliquer dans un grand nombre de contextes différents.

Introduction

An individual's knowledge, skills, and understanding have long been recognized as essential elements for maintaining an organization's economic competitiveness and for enabling its growth. In a knowledge-based economy, the knowledge within an organization is frequently identified as the main source of its competitive advantage (Edwards, Handzic, Carlsson, & Nissen, 2004). Peter Drucker (1993) observed that, for the emerging knowledge-based economy, the traditional primary resources of production (land, labour, and capital) were becoming secondary to knowledge. People need a broad range of skills in order to contribute to a modern economy and to take their place in the technological society of the current age of globalization (Lauder, 2001).

In the past few years, many countries have been confronted almost daily with intimidating information about the way in which advanced

industrialized economies conduct themselves to remain economically competitive. Which economic models helped these countries develop a competitive advantages' system? The competitive models have moved from Fordism toward a neo- or post-Fordism economy. Consequently, since the 1980s there has been increasing evidence of a rhetoric taking place in industry and in systems of higher education that promotes the provision of training and education that is much more integrated with the knowledge, skills, and attitudes required for working in a post-Fordism economy. The term "key/generic skills" and its synonyms (soft skills, core competencies, key competencies, key skills, transferable skills, personal skills, etc.) are used to describe the transferable skills that underpin competent performance in all fields (Brown, 1999; Brown, Green, & Lauder, 2001; Brown & Lauder, 1997; Green, 2002; Merhalizadeh, 1999; Stasz, Ramsey, Eden, DaVanzo, Farris, & Lewis, 1995).

Institutions of higher education must recognize that, for many students, the transition from education into employment is not straightforward and, in the past, many students have been ill-equipped for this transition. The question of skills, in general, and key/generic skills, in particular, is an important strand in the broader debate about the nature and purpose of higher education. Williams (2005) argued that two dominant discourses arise from the skills' debate: that skills are necessary for employability and increased prosperity and that skills are necessary for social inclusion and a coherent society. Beamish (2002) asserted that key skills are relevant to higher education in many ways: they support higher levels of study; they promote independent and effective learners; and they develop resourceful and self-aware students. The identification and development of skills are sensitive issues because they are closely linked to criticisms of traditional teaching methods and to demands for increased external checks on quality and standards (Welch, 1999).

The vital role that skills play in students' transition from higher education to the labour market and the amount of investment many universities put into key skills require that this issue be studied. The importance placed on shifting economic systems and on key skills in higher-education institutions has propelled the recently developed debate on the nature and relationship between key/generic skills and post-Fordism production. The discussion has centred on four questions:

- Is the concept of key/generic skills rational in neo- and post-Fordism economies?
- What are the function and nature of key/generic skills?
- To what extent are key/generic skills transferable in an organization?

- Can key/generic skills be taught outside specific organizations and, if so, how should they be taught?

This article uses a meta-evaluation to explore these questions. It focuses on a review of the literature in order to closely examine them in relation to higher education and large companies. However, before these questions are addressed, the economic transition from Fordism toward neo- and post-Fordism is briefly explained.

Fordism, Neo-Fordism, and Post-Fordism Economies

The term "Fordism" has been used as an analytical tool to describe the characteristics of industrial organization and social relations from the end of the Second World War to the mid 1970s. There are five levels of Fordism: the production process; the regime of accumulation; the mode of regulation; the mode of socialization; and a social formation characterized by the contingent correspondence of all four of the preceding features (Jessop, 1994). This model of accumulation has a number of contradictions and transformations, which have arisen from technological changes, wider social and cultural shifts, and intermediate phenomena, such as changes in the structure of organizations and patterns of employment that are linked to work, to the economy, and to life or society. To contend with these challenges and criticisms, nations and industries must inevitably develop a new system that can effectively integrate innovations in the system of production, in skill formation, in employee commitment, and in industrial relations. By doing so, a new system of wealth creation and production will arise. But what are the characteristics of such a new system? How will countries and industries challenge this new system of production at macro and micro economic levels? How can they set up a process for measuring their success in tackling currently emerging alternatives? Most of the present debate focuses on describing the characteristics of the economic, political, social, and cultural transformation that the manufacturing industry is now experiencing. Commentators from all over the world—the United States (particularly MIT researchers), Britain, France, Germany, and Sweden, for example—have addressed the crises that have occurred due to the transition from Fordism to "neo-Fordism" and "post-Fordism" (Aglietta, 1979; Brown & Lauder, 1997).

Neo-Fordism is a term used to describe recent attempts to go beyond Fordism, presumably without negating its fundamental principles. Different commentators have looked at neo-Fordism from the standpoint of technological innovation. Aglietta (1979) saw neo-Fordism as part of what has become known as the French regulation school; proponents of this school believe that neo-Fordism initially evolved from and was modified by the

internal conflicts of the Fordism regime of accumulation (Jones, 1997). Neo-Fordism has attempted to overcome the problems outlined by Taylor (1911) in a variety of ways: the restructuring of tasks; a quantum leap in automation; and increased internationalization of production. At the job level, neo-Fordism involves reversing the existing divisions of labour through the adoption, for example, of job enrichment and other schemes that may enhance productivity. Post-Fordism is an area in which the neo-Fordism transformation of work is less relevant as a solution to the crisis of Fordism, which itself may require going beyond neo-Fordism redesigns and involve more restructuring of hierarchical relations (Wood, 1992). Brown and Lauder (1997) observed the flexibility aspects of neo- and post-Fordism, asserting that

> "neo-Fordism" can be characterized as creating greater market flexibility through a reduction in social overheads and power of trade unions; as encouraging the privatization of public utilities and the welfare state; and as celebrating competitive individualism. Alternative "post-Fordism" can be defined in terms of the development of the state as a "strategic trader" shaping the direction of the national economy through investment of human capital. (p. 176)

> Under Fordism, there was little room for worker autonomy and judgment; under the neo- and post-Fordism economic models, workers require a crucial set of skills that involve co-operation and human interaction. These forms of interaction centre on the introduction of innovations, such as quality circles, quality control, just-in-time techniques, and total quality management. Proponents of these models firmly believe that people who are sufficiently trained and educated in these forms of interaction (which have become known as key or generic skills) will be extremely flexible (Mehralizadeh, 1999).

The four questions outlined in the introduction to this article all address the issues of why institutions of higher education must ensure students develop the skills that are necessary to the economy and how they should do so. Each question is now discussed in depth.

Is the Concept of Key/Generic Skills Rational in Neo- and Post-Fordism Economies?

Two arguments are relevant here. First, although key/generic skills lack philosophical or empirical support and are entirely illusory, employers use them as a vehicle for controlling and manipulating employees. This argument involves notions such as teamwork, communication, and problem solving, notions that are so vague they can mean almost anything to anyone.

Consequently, they are better understood as employer rhetoric that masks new techniques of surveillance and control.

Second, key/generic skills play a vital role in the economic regime of post-Fordism. According to Cohen (1984), introducing key skills as transferable skills is part of the hidden plan of employers to redeploy workers, since employers believe that, in reality, transferable skills correspond to the process of deskilling brought on by the new technology revolution. Accordingly, Darrah (1994) observed that managers and supervisors described higher-order skills such as initiative and planning and performing multi-tasks as "flexibility"; workers, however, asserted that higher-order skills required huge amounts of time to manage their workload and, indeed, reduced their opportunity to be flexible at work.

This kind of perspective on post-Fordism management is part of a long neo-Marxist tradition on the control and proletarianization of skill. Marglin (1974) argued that deskilling was a conscious management decision that was taken to increase control over workers and ease the management process; Garrahan and Stewart's (1992) discussion is in the same tradition. Holmes (1998) believed that the concept of transferable skills (key skills, etc.) and the methodologies by which they are purportedly identified are fundamentally flawed. Furthermore, the "skills project," that is, the attempt to identify such entities, has been shown to have failed (Holmes, 1998). Arguments are based on the failure of the skills project to deliver practical results and on the conceptual and theoretical flaws that are inherent in the very concept of key skills. However, a further reason why it is possible to assert that the term "key skills" is irrational is that it is difficult to pin down their meaning and how they function. Key skills are clearly present in many central documents about the future skill needs of the workforce around the world—for example, Cumming (1987) in Australia; The Conference Board of Canada (1992); the East Kent Information Technology homepage (1995); and Hill, Bullard, Capper, Hawes, and Wilson (1998) in New Zealand—but the problem with these lists of desirable qualities is that all the questions about key skills remain. These lists do not tell us anything about how the terms are interpreted or used within higher-education institutions or organizations. When we look to the research for help in deepening our understanding of this issue, the knowledge and insights to be gained are limited because many research designs simply ask employers which skills they want (a relatively superficial question) and it is impossible to determine from their answers how key skills are used, if they are firm or occupation specific, if they are generic, or if they can be taught.

However, it is also clear that consistent with the ideal types of neo- and post-Fordism trajectories, the degree to which the workforce is numerate and literate and how the key skills are used will differ between these trajectories.

Although in both neo- and post-Fordism trajectories, workers require increasingly higher levels of preparatory education (Lauder, 1999; Murnane & Levy, 1993), there are definite differences in the educational and training demands made by neo- and post-Fordism organizations. Neo-Fordism organizations expect multi-tasking, as opposed to multi-skilling, where the tasks are all relatively easy to learn through brief periods of on-the-job training and where little discretion is given to the judgments of workers, either individually or in teams. In contrast, post-Fordism organizations expect workers to be multi-skilled; consequently, training is more extensive and there is greater autonomy for individuals and groups to exercise judgment. Thus, although the rhetoric on the importance of key skills may be widespread, the way in which key skills are actually used is different in the two ideal kinds of organization (Brown, Green, & Lauder, 2001; Brown & Lauder, 1997; Mehralizadeh, 1999).

From this discussion, it can be hypothesized that there exists a continuum in the way in which key skills are used. In neo-Fordism organizations, key skills can be expected to be used as mechanisms of selection, compliance, and surveillance. Here, teamwork is used as a metaphor for individuals who are compliant and "will fit in" and do as they are told in terms of multi-tasking. For example, in their study of Nissan, Garrahan and Stewart (1992) argued:

> Teamwork is supposed to put employees in the centre of decision-making for their work and achievement and give them more power in the workplace. But what occurs is not worker multi-skilling, but relative inflexibility, participation without determination and involvement without control. Also teamwork and JIT have two faces, simplifying the tasks so workers can pick them up quickly, to reduce costs of training and, at the same time, create a situation which makes it much easier transferring knowledge from workers to managers. (p. 62)

Similarly, Graham (1994), who worked as a hidden participant/observer at a Subaru-Isuzu automotive plant in Indiana, concluded that organizing work around the team could control workers in three ways: as a form of self-discipline, because every member of the group has responsibilities; through peer pressure, in the case of failing self-discipline; and pressure from the team leader, since ultimately the responsibility for delivery rests on the team leader. Communication skills are used as a metaphor to judge whether workers are likely to be resisters or to express a "positive" attitude to work. In these ways, key skills are used as mechanisms of control. In contrast, in post-Fordism organizations, key skills are used to add value to the organization by genuinely taking into account the judgments of teams and individuals. This continuum is a matter of emphasis, however. Even in post-Fordism organizations, although elements of control are maintained and judgments

about key skills are used to hire, control, and fire workers, far more can still be expected in the way of training and genuine teamwork and collective problem solving.

Part of the argument is that, under neo-Fordism, the application of key skills as a mechanism of control as described by neo-Marxists may well be the case. But, this might also be only a partial analysis in that when firms are close to the ideal of a post-Fordism organization, key skills are used differently. At the same time, it should be noted that if these skills were solely used as a mask to control workers, then a great deal of time and energy had been devoted to seeking to understand and develop them. Through our attempts to learn if these skills are organizationally or occupationally specific, we begin to gain a deeper understanding of how they can be used within organizations and, more crucially, if they can and should be taught in higher education.

What are the Function and Nature of Key/Generic Skills?

The second question concerns the domain-specific nature of key skills. Two research traditions can be drawn upon to address the central issues of how key skills function in an organization and the degree to which they are either organizationally or occupationally specific or generic in nature, or some combination of these. The first tradition involves the qualitative observation of the way in which workers in specific organizations use key skills, and the second pertains to the notion of situated learning.

One of the best examples of the first research tradition is the work of Stasz et al. (1995). Their work is of specific interest because it concerns the further question of whether key skills can be taught. These authors researched workplace skills in practice, focusing on three skill areas (problem solving, communications, and teamwork), as well as work-related dispositions. They claimed that the new workplace emphasizes a shift in decision-making and problem solving, from the supervisory level to the shop floor, where workers must cope on the spot with a growing number of unpredictable problems. Their study revealed three important results. First, key/generic skills and dispositions are important in work and to workers, but they vary within the work context. Second, employers do not necessarily understand the skill requirements of their front-line workforce and so may lack effective strategies for developing workforce skills; furthermore, employers may do little to foster skill development among non-managerial workers and sometimes may take courses of action that undermine skill development. Third, employers have weak connections with education providers for supporting the acquisition or development of workforce skills.

The second tradition concerns the work of theorists of situated learning and cognition. Many commentators (Billett, 1992, 1994; Collins, Brown, & Newman, 1989; Darrah, 1994; Gott, 1989; Lave & Wenger, 1991; Rogoff & Lave, 1984; Stasz, McArthur, Lewis, & Ramsey, 1990; Stasz et al., 1995; Thurly & Lam, 1990) have pointed out that skill requirements have a social domain and are constructed through a social process. One school of thought is the theory of social and cultural skills development. This theory, which is attributed to Vygotsky (1978), argues that the concept of skills is domain specific and is not objective; moreover, it addresses the main query of how individuals learn by asking how individuals construct meaning. Intrinsic to Vygotsky's socio-cultural theory is the notion that social experiences shape the ways in which individuals think and interpret their world; thus, individual student cognition occurs in a social situation and is inseparable from it. Vygotsky also asserted that skills have a social systemic nature and they are not related to individuals. These insights have given rise to the paradigm of situated cognition, or situated learning, which proposes that learning is situated within the context in which it is constructed. In other words, the concept of skills is not an objective entity distinct from the context in which it is learned but rather an integral component not only of the context in which it is constructed but also of the activity in which the learner is engaged during construction.

Indeed, as Griffiths (1987) commented, the word "skill" is not emotionally neutral; it carries a miasma of political and educational connotations, as well as a variety of more ordinary language connotations. Thurly and Lam (1990), in their study of the development of the skill formation of electronic engineers, believed that skill formation is connected to the work roles or tasks determined by specific organizations. They emphasized that the implication of this approach is that "private" learning may be taking place that has nothing to do with the skill formation that is related to actual work roles. Although organizations may spend a great deal to send their employees to off-the-job training, the level of actual skill formation may still be low because skill formation is "effective" only in relation to the organization's norms and objectives. The same points could be made about a narrow, vocationally oriented educational system.

According to Koike and Inoki (1990, in Lauder, 1999, p.39), the ability to constantly adapt is partly a function of the repeated transmission of new skills. This transmission, which is incremental and is aided by the culture and history of a corporation, enables workers to acquire the tacit skills necessary for skilled performances. In making these observations, Koike and Inoki relied on Polanyi's (1962) distinction between scientific skills and that which can only be gained through personal experience. Both are necessary in the production process and are embodied in what Polanyi called personal skills.

The issue of tacit skills and the role of institutions in their transference are central to an understanding of how skills are diffused at the individual, or micro, level. In the broader context, the significance of a flexibly skilled internal labour market, based on a job for life, becomes clear when placed against the demands made on workers for constant innovation within a zero-defect production system. The goal of Billett's (1992, 1994) studies on skilled workers in the retail, secondary-processing, transport, and hospitality industries (among others) was to compare three modes of vocational skill development and their effectiveness for pre-employment, integrated (apprenticeship), and on-the-job learning. The outcome also showed strong support for learning situated in the workplace, despite, according to Billett, the often-advanced criticism that specific learning situations are restrictive, with learning being bound to that setting. This claim is made against learning in formal settings, such as schools or colleges, and its proponents assert that skill transfer from that type of setting is both limited and configured by the context of that setting. However, if key skills are organization specific, it raises the question of their transferability and if they can or should be taught in higher education. These issues are discussed further in the next section.

To What Extent are Key/Generic Skills Transferable in an Organization?

The term "transferability" is used to denote the application of key skills across different domains or a variety of social and, in particular, employment situations (Bridges, 1993). Hyland and Johnson (1998) pointed out that there is no empirical evidence to support the "independence or generalisability" of key/generic skills (p. 44). They believed that if transferability is taken to mean the existence of "generally applicable skills [that have] utility in a wide range of settings" (p. 46), then claims about transferability are almost certainly indefensible. Learning and problem solving cannot be separated from the cues, tools, and people in an individual's environment. On this same issue, Terry Wareham and Gordon Clark (2001) argued:

> Skills are not content-free and so cannot be "taught" in isolation from the discipline—they need to be developed as part of the normal practice of departments. In addition, it is neither manageable nor desirable to teach these skills divorced from the contexts in which they are used. However, in order for the skills to be developed successfully it is important that their existence within the curriculum is clear to students and that they have opportunities to reflect on their development in these areas. The Personal Development Profile currently being piloted by the Careers Service in three departments provides a vehicle for students to think about and record their growing abilities. (p. 22)

Bridges (1993) had an answer to this problem. According to him, the term "transferability of skills" tends to be preferred when people are talking about the application of skills across different social contexts; for instance, engineers teach approaches to problem solving in preparation for a whole range of circumstances. At the heart of this debate, Bridges argued, there is a crucial distinction to be made between transferable generic skills and transferring skills:

> *transferable generic skills*—where what is supposed is that there are skills which can be deployed with little or no adaptation in a variety of social settings. Word processing might arguably be held to involve the same skills whether you were doing it in a university centre, or office pool or as a professional writer at home. By contrast, perhaps negotiation skills might be heavily context dependent, relying on all sorts of sensitivity, responsiveness to and adaptation to relations between you and your partner, your class of students, your employer or your bank.
>
> *transferring skills*—which consist of whatever is involved in that kind of adaptation. These are as it were the meta-skills, the second order skills, which enable one to select, adapt, adjust and apply one's other skills to different situations, across different social contexts and perhaps similarly across different cognitive domains, like learning the computer. (p. 50)

Arguably, then, it is the teaching of transferring skills that determines how key skills can be adapted across organizations. This distinction supports the view that there is a difference between organization-specific and generic skills. The point here is that key/generic skills may be taught by making students aware of the issues, questions, and techniques involved in exercising key skills in specific contexts. It is a way to generate a set of expectations in students about how they will need to adapt to specific workplaces. In this sense, key/generic skills are one aspect of Bridges's notion of transferring skills. In turn, these ideas raise the possibility that key skills can be taught outside the specific context of the organization.

Can Key/Generic Skills Be Taught Outside Specific Organizations and, If So, How Should They Be Taught?

The fourth question this article seeks to answer concerns the possibility of key/generic skills being taught outside specific organizations and, if this is possible, how higher education and schools can develop key skills among students. Glen (2006) argued that workplace context is paramount for learning key skills, and to be successful it is necessary to 1) take a holistic view of the key elements of the business that are most likely to impact team engagement, motivation, attendance, and retention; 2) link individual assessment directly to the key drivers of the business; and 3) recognize that key talent is likely to thrive on experience-based, career-leverage opportunities. However, there is a further complicating dimension to this issue: these skills are closely related to personality or character. For example, the key skills that are the focus of this study relate to communication, teamwork, problem solving, and information technology. Of these, the first two and possibly the third have a direct bearing on personality; given that an individual's character may or may not change in a learning situation, is it possible to teach these skills? And, if it is, how can key skills be taught and evaluated most effectively?

Although there is general agreement on the teachability of key skills, the crucial question is under which conditions are teaching and learning feasible? Which kinds of theoretical approaches are able to describe a sound framework for delivering key skills and how can the effectiveness of teaching key skills be improved? Teaching and learning key skills are a matter of debate because not all teaching leads to learning. According to the *Key Skills Guide* (Centre for Developing and Evaluating Lifelong Learning, 2005), in order to work toward the development of key skills, several issues must be considered: a) the different teaching and learning styles that are necessary to promote key skills, b) the variety of styles that can be adopted, c) the quality and nature of the learning environment, d) student motivation, and e) the assessment process.

Two groups of commentators have addressed the learning and teaching of key skills. One group—Brown, Collins, and Duguid (1989); Collins et al. (1989); Farnham-Diggory (1992); Resnick (1989); and Vygotsky (1978)—focused explicitly on the value of cognitive apprenticeship-situated learning. Members of the other group—commentators such as Powell, Smith, and Reakes (2003); Trower (1984); Cotton (1993–1994); Stasz et al. (1990); and Stasz et al. (1995)—acknowledged that key skills are organization specific but that their environments can be situated in higher-education institutions and schools to prepare students for learning key skills.

In explaining situated cognition, Brown et al. (1989) compared concepts to tools. As with tools, concepts can be fully understood only through use, and as it is possible to acquire a new tool but be unable to use it, so it is possible for a learner to acquire a verbal definition of a concept, rule, routine, or algorithm yet not be able to apply it. Situated-cognition theorists describe these acquired but unusable skills as inert, whereas well-developed and useful skills are robust.

Proponents of cognitive apprenticeship (Farnham-Diggory, 1992; Resnick, 1989) argue that people acquire many skills in real-life contexts, and they refine these skills by applying them in new situations. Therefore, learners should be paired with a more-experienced learner or a mentor as they begin to learn a new skill or concept (Brown et al., 1989; Collins et al., 1989; Farnham-Diggory, 1992). As the novice student begins to construct an understanding of a new skill or concept through this cognitive apprenticeship, the more-experienced learner provides the assistance, or scaffolding, needed for mastery.

A review of experiences in Germany and Sweden revealed that the enthusiasm and initiative of employing organizations will play a crucial part in the delivery of key/generic skills, at least in the short and medium run. These two European case studies have given us different answers to our question: Can key/generic skills be taught outside specific organizations and, if so, how should they be taught? In general, neither country has mastered the task of generic skill development to perfection and neither is ready for a straightforward emulation, albeit for different reasons. However, it is interesting to observe that, in both countries, vocational training is used to foster generic skills and key competencies. It is also worth noting that instead of opting for radical, long-term strategies (e.g., the radical reform of a secondary education system), both Germany and Sweden try to integrate policies and local pilot projects within existing vocational-education structures, as illustrated by numerous new qualification and skills' programs and related initiatives (ranging from the introduction of National Vocational Qualifications and Investors in People accreditation to Lifelong Learning, University for Industry, and Individual Learning Accounts) and a range of changes to school education syllabuses in recent years (Gibbons-Wood & Lange, 2000).

A considerable number of universities have modified the delivery and assessment of their degree programs in order to help students develop key transferable skills. The most common approach has been to introduce either modular degree structures or modular delivery of parts of degree courses. An alternative, but less widely adopted, strategy has been to introduce Problem-Based Learning (PBL) into degree courses. Often, however, modularization and PBL have further problematized, rather than resolved, the question of how to teach students to transfer knowledge and skills from

one context to another. For example, Gilbert and Woolf (1996) described a module-validation template that asks curriculum designers to indicate the various types of skills "developed," "practiced," and/or "assessed" in a module. Fallows and Steven (2000) provided a template that outlines detailed "cognitive" and "generic skills" descriptors for a range of "operational contexts" for each level of undergraduate study, while Hodgkinson (2000) described a matrix that can be used to provide an overview of the key skills and learning strategies being developed in a module, with the potential to match skills development with course content. Watson (2002) illustrated how learning outcomes common to degree courses in construction and the built environment, namely, those concerned with communication, group dynamics, and professional awareness, may be mapped. Finally, evidence suggests that students learn to transfer their knowledge and skills when they are developed in contexts of increasing complexity (Eraut, 1996). Nonetheless, it is precisely this aspect of the higher-education learning experience that has frequently been sacrificed through the development of modular programs, in part because departments have "divided up" existing courses into smaller blocks, rather than formulated new criteria to "redesign" teaching, learning, and assessment processes (Dunne, 1997, p. 112). Some studies, however, have indicated that the forms of study associated with traditional academic degrees increase employment prospects more than key-skill modules (e.g., Brown & Scase, 1995). The results of the Key Skills Guide project at the University of Nottingham (Centre for Developing and Evaluating Lifelong Learning, 2005) revealed that although traditional didactic teaching may still have some place in higher education, strategies that encourage a more participative approach were more effective.

So far, it is clear that in order to teach key skills, it is essential to take into account the real situation and to have the learner's full co-operation and effort. Are there any other conditions that might be useful?

Here, once again, we refer to the results of the Key Skills Guide project, which emphasized the importance of the quality and nature of the learning environment, motivating students, and the assessment process. In institutional settings, employability skills are learned most effectively when classrooms replicate key features of real-work settings and student tasks approximate those performed by workers in those settings (Berryman, 1996; Cotton, 1993–1994; Jamieson, 1988; Stasz et al., 1990; Stasz et al., 1995). These findings validate the view that in teaching vocation-specific skills, active hands-on learning in actual or simulated work environments is far more effective than isolated, decontextualized learning. Jamieson et al. (1988) responded to the question of the effectiveness of work simulations as a vehicle for student learning by arguing that a) work simulations might be a much better technique for teaching students the principles and concepts underlying the facts;

b) simulations produce better learning gains in the affective domain than do most other techniques; and c) many experienced teachers agree that simulations are more effective than traditional learning methods. Berryman (1996) noted that, too often, knowledge and skills are taught in settings that do not reproduce the settings in which the work must be performed, and this out-of-context teaching impedes the transfer of training to settings outside the training context.

Stasz et al. (1995) conducted two studies on the teaching and learning of generic skills and work-related attitudes in academic, as well as vocational, environments in order to examine if effective instruction in each setting is similar. The first study focused on the instruction of generic skills, particularly complex reasoning skills, and the second focused on teaching generic skills and attitudes in both academic and vocational classrooms. Based on these studies, the authors developed a model (Table 1), which has four major themes; within each theme, sub-themes that emerged from the data are specified. This study is important for two reasons: it attempts to link school-based training to that of the work situation, and it is based on a very sophisticated piece of research that examines whether key skills are organizationally or occupationally specific.

Table 1: Components of an Instructional Model for Teaching Generic Skills and Work-related Attitudes (Stasz et al., 1995, p. xvi)

Instructional goals	Classroom design	Teaching techniques	Institutional context
• complex reasoning skills • work-related attitudes • co-operative skills • domain-specific knowledge and skills	• situated learning • culture of expert practice • motivation • co-operation • teacher roles	• modelling • coaching • scaffolding • articulation • reflection • exploration	• access to knowledge (time, material, staff, facilities) • press for achievement • professional teaching conditions

As Table 1 illustrates, instructional goals included complex reasoning skills, co-operative skills, domain-specific skills and knowledge, and work-related attitudes. For instance, of the classes examined by the authors, in the English class, writing was taught as a tool for thinking, while in classes such as electronics, manufacturing, and design, teachers focused on instilling positive work-related attitudes and co-operative skills. All teachers followed their

classroom instructional goals by using situated learning, giving students involved in practice and project work a situation in which real tasks were performed by adult workers, rather than exercises. Teachers participated in the process of practice and did little lecturing; instead, they relied heavily on modelling, coaching, and scaffolding to demonstrate how an expert practitioner carried out a task. Stasz et al. (1995) concluded that although separate generic skills were taught in different domains, these skills were linked in practice and must be considered in an integrated fashion in order to design classrooms that work.

The study by Powell, Smith, and Reakes (2003) added more elements to the model developed by Stasz et al. (1995). Powell et al. believed their evidence suggested that learners' ease of access to basic-skills provision depends upon the nature of the structure adopted. These structures are partnerships (forming and utilizing a wider range of partnerships with organizations), integration of basic skills (embedding basic skills in wider programs that appeal to potential participants), situated learning (the context of learning), settings (different places of learning), and Information communication Technology (the use of technology).

As well as the conditions addressed by Stasz et al. (1995) and Powell et al. (2003), the Key Skills Guide project (Centre for Developing and Evaluating Lifelong Learning, 2005) concluded that attention to student motivation is vital. All of these studies affirmed that the main theme to emerge from the literature regarding methods of delivery is that, where possible, such methods should be flexible and tailored to the needs and circumstances of particular learner groups. Results from the Key Skills Guide project indicated that because higher education is not compulsory, students choose to be in higher education and arrive at university with certain expectations. It would be impossible to identify the multitude of reasons that motivate individuals to study in institutions of higher education, but most lists would likely include:

- an interest in studying a particular subject or programme
- the desire to obtain a higher qualification
- the possibility of improved employment prospects
- the opportunity to meet like-minded people
- the opportunity to develop further knowledge and skills
- parental, peer and social pressures.

(Centre for Developing and Evaluating Lifelong Learning, 2005, p. 35)

The Key Skills Guide project found that a variety of strategies were currently used within higher education to provide students opportunities to develop key skills. A survey of higher-education institutions in the late

1990s revealed that all of the following arrangements are in use, often in combination:

- Key skills being *fully integrated* within some programmes of study,
- Key skills being part of an induction programme,
- A progressive, *structured* key skills programme operating for all students throughout the institution,
- Key skills being *added on* to the curriculum (in, for example, a key skills module),
- Key skills *workshop/access/on demand/drop-in* provision (often through a Learner Support Department, or Careers Department),
- Recognition given to *extra-curricular* key skills activities/achievements (that is, from outside the mainstream academic programme),
- A student *transcript* or Personal Development Profile which includes key skills achievements.

> In some HE institutions, key skills formed a compulsory part of every teaching programme while in others they were voluntary. In some institutions key skills were assessed and accredited, in others not. In some institutions key skills were regarded as a means of empowering students while in others they were regarded as too narrow and restrictive. (Centre for Developing and Evaluating Lifelong Learning, 2005, p. 40)

To summarize, the main implication of the evidence outlined in this article is that key/generic skills can be taught in academic and vocational classrooms. For these skills to be taught effectively, classroom instruction should be designed around project work that situates learning in a particular context and provides opportunities for authentic practice. Institutions of higher education and vocational schools should also provide what is being proposed from a situated or a socio-cultural perspective. As Billett (1994) argued, learners require an authentic socio-cultural learning experience in order to enter into activities that are socio-culturally meaningful, generative of proceduralization, and indexed richly to secure recall and application (p. 9).

Conclusion

In this article, we asked four questions concerning the nature and teachability of key/generic skills in higher education. We argued that although these skills could form a valid part of the productive process in post-Fordism organizations, this raised the question of whether these skills are occupationally or professionally specific. We answered this question by asserting that key skills are specific to particular social domains. The consequence of our

argument was that if such skills are professionally or organizationally specific, then how can they be transferred or taught? We suggested that there are strategies that can be employed in transferring key skills, in line with Bridges's distinction between transferable and transferring skills, and that although preparatory work can be done in higher education or other educational institutions, fluency can only be achieved through practice in specific contexts.

This conclusion suggests that higher education has a role to play in developing key/generic skills. Nevertheless, a high degree of indeterminacy remains because the "generic" elements taught in higher-education institutions must be applied in a range of different contexts and, thus, key skills will be defined and described in quite different words. The important concern raised in this article—that higher-education institutions, labour markets, and students, as well as current programs of higher education in teaching and learning, must have a clear understanding of key skills—requires more specific scholarly research. Such research has the potential to provide information about how institutions of higher education and organizations actually teach key skills and how those skills fit into the organization of work.

References

Aglietta, M. (1979). *A theory of capitalist regulation*. London: New Left Books.

Beamish, Val. (2002). *The impact of skills development (Curriculum 2000) in schools and colleges on higher education*. Learning and Skills Development Agency, Skills Development in Higher Education: Forging Links Conference Report.

Berryman, Sue E. (1996). *When American businesses change: The imperatives for skill formation*. NCEE Occasional Paper No. 9. New York: National Centre on Education and Employment.

Billett, S. R. (1992, November). *Authenticating learning: Learning in the workplace*. Paper presented at the 1992 AARE & NZARE Joint Conference, Education Research: Discipline and Diversity, Deakin University, Geelong, Australia.

Billett, S. R. (1994). Searching for authenticity: A socio-cultural perspective of vocational skill development. *The Vocational Aspect of Education*, *46*(1), 3–16.

Bridges, D. (1993). Transferable skills: A philosophical perspective. *Studies in Higher Education*, *18*(1), 43–52.

Brown, J., Collins, A., & Duguid, P. (1989). Situated cognition and the culture of learning. *Educational Researcher*, *18*(1), 32–42.

Brown, P. (1999). Globalisation and the political economy of high skills. *Journal of Education and Work, 12*(3), 233–251.

Brown, P., Green, A., & Lauder, H. (2001). *High skills, globalization, competitiveness, and skill formation*. Oxford, UK: Oxford University Press.

Brown, P., & Lauder, H. (1997). Education, globalisation and economic development. In A. H. Halsey, H. Lauder, P. Brown, & A. Stuart Wells (Eds.), *Education, culture, economy and society* (pp. 172–193). Oxford, UK: Oxford University Press.

Brown, P., & Scase, R. (1995). *Changing corporate realities*. London: UCL.

Centre for Developing and Evaluating Lifelong Learning. (2005). *Key skills guide. Engineering Subject Centre guide: Supporting key skills in engineering*. Nottingham, UK: University of Nottingham, Higher Education Academy, Engineering Subject Centre, School of Education.

Cohen, P. (1984). Against the new vocationalism. In I. Bates, J. Clarke, P. Cohen, D. Finn, R. Moor, & P. Willis (Eds.), *Schools for dole: The new vocationalism* (pp. 104–170). London: Macmillan.

Collins, A., Brown, J. S., & Newman, S. E. (1989). Cognitive apprenticeship: Teaching the crafts of reading, writing, and mathematics. In L. B. Resnick (Ed.), *Knowing, learning, and instruction* (pp. 283–305). Hillsdale, NJ: Erlbaum.

Cotton, K. (1993–1994). *Developing employability skills*. School Improvement Research Series. Santa Monica, CA: RAND.

Cumming, J. (1987). Curriculum and the world of work: Issues and trends in Australian schools. *British Journal of Education and Work*, *1*(3), 179–186.

Darrah, C. (1994). Skill requirement at work. *Work and Occupations*, *21*(February), 64–84.

Dench, S. P. S., & Giles, L. (1998). *Employers' perceptions of key skills*. The Institute for Employment Studies, Report 349 (BN19RF). Brighton, UK: University of Sussex.

Drucker, P. F. (1993). *Post-capitalist society*. New York: HarperCollins.

Dunne, E. (1997, January). *Higher education: Generic skills in a learning society*. Paper presented at the ESRC Conference Towards a Learning Society, Bristol University, Bristol, UK.

East Kent Information Technology Centre. (1995). *Accredited investors in people and quality managed Information Technology Centre in East Kent.* [Homepage]. Retrieved January 1, 2007, from http://www.technology-enterprise.co.uk

Edwards, J. S., Handzic, M., Carlsson, S., & Nissen, M. (2004). Knowledge management research and practice: Visions and directions. *Knowledge Management Research & Practice*, *1*(1), 49–60.

Eraut, M. (1996, September). *The new discourse of vocational education and training*. Paper presented at the ECER 96 Conference, Seville, Spain.

Fallows, S., & Steven, C. (2000). Embedding a skills programme for all students. In S. Fallows & C. Steven (Eds.), *Integrating key skills in higher education* (pp. 17–31). London: Kogan Page.

Farnham-Diggory, S. (1992). *Cognitive processes in education* (2nd ed.). New York: HarperCollins.

Garrahan, P., & Stewart, P. (1992*). The Nissan enigma: Flexibility at work in a local economy*. London: Mansell.

Gibbons-Wood, D., & Lange, T. (2000). Developing generic skills—Lessons from Germany and Sweden. *Education + Training*, *42*(1), 24–32.

Gilbert, J., & Woolf, H. (1996). Personal transferable skills and an undergraduate modular curriculum. In *Modular higher education in the UK—In focus* (pp. 88–91). London: HEQC.

Glen, G. (2006). Key skills retention and motivation: The war for talent still rages and retention is the high ground. *Industrial and Commercial Training*, *38*(1), 45. Retrieved July 15, 2007, from www.emeraldinsight.com/reprints

Gott, S. P. (1988). T*he lost apprenticeship: A challenge for cognitive science*. Paper presented at the meeting of the American Educational Research Association, New Orleans.

Graham, L. (1994). How does the Japanese model transfer to the United States? A view from the line. In T. Elgar & C. Smith (Eds.), *Global Japanization? The transnational transformation of the labour process* (pp. 123–152). London: Routledge.

Green, F. (2002). *Work skills in Britain 1986 to 2001*. London: DfES.

Griffiths, M. (1987). The teaching of skills and the skills of teaching: A reply to Robin Barrow. *Journal of Philosophy of Education, 21*(2), 203–214.

Hill, R., Bullard, T., Capper, P., Hawes, K., & Wilson, K. (1998). Learning about learning organizations: Case studies of skill formation in given New Zealand organizations. *Name of Journal*, *5*(4), 184–192.

Hodgkinson, L. (2000). Benchmarking key skills using national standards: The Open University experience. In N. Jackson & H. Lund (Eds.), *Benchmarking for higher education* (pp. 104–114). Buckingham, UK: Society for Research into Higher Education and Open University Press.

Holmes, L. (1998, February). *One more time, transferable skills don't exist ... (and what we should do about it)*. Paper presented at the Higher Education for Capability Conference Embedding Key Skills Across the Curriculum, Nene College, Northampton, United Kingdom. Retrieved November 24, 2007, from http://www.elwa.ac.uk/elwaweb/doc_bin/Research%20Reports/Basic%20skills%20and%20key%20skills%20final%20report.pdf

Hyland, T., & Johnson, S. (1998). Of cabbages and key skills: Exploding the mythology of generic transferable skills in post-school education. *Journal of Further and Higher Education*, *22*(2), 163-172.

Jamieson, I. (1985). Hegemony or pedagogic liberation: The schools-industry movement in England and Wales. In R. Dale (Ed.), *Education, training and employment. Towards a new vocationalism?* (pp. 23–41) Oxford: Pergamon Press, in association with The Open University.

Jessop, B. (1994). Post-Fordism and the state. In A. Amin (Ed.), *Post-Fordism: A reader* (pp. 251–280). Oxford, UK: Blackwell.

Jonathan, R. (1987). T*he Youth Training Scheme and generic skills: An educational analysis*. In M. Holt (Ed.), *Skills and vocationalism: The easy answer* (pp. 68–120). Milton Keynes, England: Open University Press.

Jones, A. M., & Hendry, C. (1994). The learning organisation: Adult learning and organisational transformation. *British Journal of Management*, *5*(2), 153–162.

Jones, B. (1997). *Forcing the Factory of the Future: Cybernation and Societal Institutions*. Cambridge: Cambridge University Press.

Koike, K., & Inoki, J. (Eds.). (1990). *Skill formation in Japan and Southeast Asia*. Tokyo: University of Tokyo Press.

Lauder, H. (1999). Competitiveness and the problems of low skills equilibria: A comparative analysis. *Journal of Education and Work, 12*(3), 281–294.

Lauder, H. (with Mehralizadeh, Y). (2001). Globalization, skill, and the labour market. In P. Brown, A. Green, & H. Lauder (Eds.), *High skills globalization, competitiveness, and skill formation* (pp. 204–233). Oxford, UK: Oxford University Press.

Lave, J. (1988). *Cognition in practice.* New York: Cambridge.

Lave, J., & Wenger, E. (1991). *Situated learning.* New York: Cambridge.

Marglin, S. (1974). What do bosses do? The origins and functions of hierarchy in capitalist production. *Review of Radical Economy, 6*(3), 60–112.

McLaughlin, M. (1992). *Employability Skills Profile: What Are Employers Looking For?* (Report 81-92-E). Ottawa, ON: Conference Board of Canada.

Mehralizadeh, Y. (1999*). What is the relationship between schools and the demands of paid work? A case study of Rover and its partnership with Swindon schools*. Unpublished doctoral dissertation, University of Bath, Bath, UK.

Murnane, R. J., & Levy, F. (1993). Why today's high school education males earn less than their father did: The problem and an assessment of responses. *Harvard Educational Review*, *63*(1), 1–20.

Powell, R., Smith, R., & Reakes, A. (2003). *Basic skills and key skills: A review of international literature, Final report.* Retreived April 25, 2007. from www.nfer.ac.uk/about-nfer/people/smith-robert.cfm.

Resnick, L. (Ed.). (1989). *Knowing, learning, and instruction*. *Essays in honour of Robert Glaser*. Hillsdale, NJ: Lawrence Erlbaum.

Rogoff, J., & Lave, J. (Eds.). (1984). *Everyday cognition: Its development in social context.* Cambridge, MA: Harvard University Press.

Stasz, C. (1997). Do employers need the skills they want? Evidence from technical work. *Journal of Education and Work, 10*(3), 205–224.

Stasz, C., McArthur, D., Lewis, M., & Ramsey, K. (1990). *Teaching and learning generic skills for the workplace*. Santa Monica, CA: RAND.

Stasz, C., Ramsey, K., Eden, R., DaVanzo, J., Farris, H., & Lewis, M. (1995). *Classrooms that work: Teaching generic skills in academic and vocational setting.* Santa Monica, CA: RAND.

Taylor, F. W. (1911). *The Principles of Scientific Management*. New York: Harper & Row.

Thurly, K., & Lam, A. (1990). Skill formation of electronic engineers: Comparing the learning behaviour of British and Japanese engineers. *Comparative Industrial Relations,* Discussion Paper Series, 90/211.

Trower, P. (Ed.). (1984). *Radical approaches to social skills training*. London: Croom Helm.

Vygotsky, L. (1978). *Mind in society: The development of higher psychological processes.* Cambridge, MA: Harvard University Press.

Wareham, T., & Clark, G. (2001). *Embedding key skills into teaching programmes*. Retrieved September 5, 2007, from http://domino.lancs.ac.uk/CELT/tall.nsf/x/DB424E670D5729F980256BAE0055F8BA

Watson, P. (2002). The role and integration of learning outcomes into the educational process. *Active Learning in Higher Education*, *3*(3), 205–219.

Welch, P. (1999). Key skills and the teaching of politics. *European Consortium of Political Research News*, *Autumn*. Retrieved September 15, 2006, from http://pers-www.wlv.ac.uk/~le1810/skills3x.htm.

Williams, J. (2005). Skill as metaphor: An analysis of terminology used in Success For All and 21st Century Skills. *Journal of Further and Higher Education*, *29*(2), 181–190. Retrieved Novmber 11, 2007, from http://www.metapress.com.ezproxy.lib.ucalgary.ca/media/927y4cyxmm4rtn2n8q0v/contributions/j/8/5/0/j850721x4kk87780.pdf.

Wood, S. (1992). The Japanization of Fordism. *Economic and Industrial Democracy, 14*(4), 535–555.