Work-Based Learning. A new imperative: developing reflective practice in professional life

Elda Nikolou-Walker* and Jonathan Garnettb

aQueen’s University Belfast, UK; bMiddlesex University, UK

This article sets out the experience of an innovative Work-Based Learning programme based in a university context. The scheme itself is designed to enable different levels of flexible participation through the engagement of Small Medium Enterprises (SMEs) and large organizations in the design and delivery of several types of provision. The university provides the input of a full-time academic, with one-to-one support in the university and on site, leading to accredited awards at BA (Hons) Certificate, Diploma and Masters level. To date the scheme has been in operation for five years and has been evaluated by the authors as part of an internal review. The main sources of evidence in the review have been the students and the employers and this paper focuses on their perceptions of its advantages and disadvantages in relation to Work-Based Learning professional development. The article concludes with an outline of the next stage of the evaluation which is designed to focus on assessment techniques for onsite evaluation of the technical and higher level skills which the programme aims to develop.

Recognition of the workplace as a place of learning and the importance of knowledge to work is not new. The philosophers of Classical Greece grappled with these issues over two and a half thousand years ago. Even the more recent upsurge in interest in knowledge as an economic resource, which spawned the rise of ‘knowledge management’ in the mid-1990s, was foreshadowed as long ago as 1890 in the writings of the economist Alfred Marshall who believed that ‘Capital consists in a great part of knowledge and organization. … knowledge is our most powerful engine of production’ (Quintas, 2002, p. 1).

The rise of an information age and a post-industrial knowledge economy is now the subject of countless academic articles and business bestsellers. For example, the McKinsey global management survey on knowledge management (Kluge et al., 2001) identifies a historical transition from the three ‘concrete’ production factors of land, labour and capital to the ‘intangible’ and ‘pre-eminent production factor’ of knowledge. The report states that knowledge is ‘essential in making operations effective, building business processes or predicting the outcome of business models’
Meeting the needs of the ‘knowledge driven economy’ preoccupy company CEOs and government ministers.

Work-based learning is situated within the context of the paradigm shift from industrial to knowledge society. The rhetoric of knowledge, learning and work is pervasive and dominant in the developed world. This is not to say that the paradigm shift is total or complete. The eclipse of the industrial paradigm is far from total even in the advanced economies of Western Europe, Japan and the USA. Castells (2000, p. 74) evidences a new economy which is ‘informational, global and networked’ but is also dominated by the G-7 countries (providing 90% of high-technology manufacturing), heavily segmented and selectively globalized, primarily via transnational corporate production networks. Participation in the information or knowledge age is currently not possible for the majority of the world’s population. Castells (2000, p. 134) points out that the segmentation of the global economy leads to global trends ‘of increasing inequality and social exclusion’ as ‘while the informational economy shapes the entire planet, and in this sense it is indeed global, most people do not work for or buy from the informational, global economy’.

The article introduces university work-based learning and locates it within a paradigm shift from an ‘industrial society’ to a ‘knowledge society’ (Rohlin et al., 1998). Due to technological change fewer people are producing more and thus the industrial production logic of the ‘industrial paradigm’ is losing its position as the dominant paradigm, while the dramatic development of information technology has ushered in information or knowledge society paradigms. This paradigm shift has in turn impacted upon the nature and structure of organizations and the nature and roles of management and leadership (e.g. De Geus, 1997; Zohar, 1997). Work-based learning, intellectual capital and knowledge management can be seen as manifestations of this paradigm shift and their potency is clearly associated with it.

The concept of work-based learning as a paradigm shift is taken up in *Work based learning, a new higher education* (Boud & Solomon, 2001). The distinctive features of university work-based learning are identified as follows:

- A partnership between an external organization and an educational institution specifically established to foster learning—this is seen as a relationship of satisfying need by the external organization in return for revenue to the educational institution.
- Learners are employees or have some contractual relationship with the external organization that negotiates learning plans approved by the educational institution and the organization.
- The programme followed derives from the needs of the workplace and of the learner rather than being controlled by the disciplinary curriculum.
- The starting point and level of the programme is established after a structured review and evaluation of current learning.
- A significant element of the programme is work-based learning projects that meet the needs of the learner and the organization.
- The educational institution assesses the learning outcomes of the negotiated programme with respect to a transdisciplinary framework of standards and levels.
The development of work-based learning in the UK can be traced back to two major educational innovations. The first and most widespread was the introduction of the Accreditation of Prior Experiential Learning (APEL), a process by which experiential learning is given recognition and an academic value. Experiential learning encompasses knowledge, skills and behaviours acquired in a planned or unplanned way through life, especially work. APEL in the UK is evidenced in the 1980s as a tool for admission to higher education programmes and as a valid form of demonstration of competency against National Occupational Standards for the award of a National Vocational Qualification (NVQ). The use of APEL in the higher education sector developed from the pioneering work of the Learning from Experience Trust (e.g. Evans, 1988) and the academic credit for mature entry provided by the Council for National Academic Awards (CNNA) (the academic awarding body for the polytechnics) in 1986. The CNAA stance was crucial, as it legitimized APEL in higher education. The development drew heavily from similar work in the USA and was driven by the perceived need to extend access to higher education to mature students at a time when it was feared that demographic trends would severely restrict the pool of 18-year-olds seeking entry to higher education. Thus the initial primary purpose of APEL was to increase the supply of students to higher education. The spread of APEL was fuelled in the early 1990s by the favourable policy and funding context needed to promote a dramatic expansion of higher education numbers. The Robertson report *Choosing to change* (1994) was influential in highlighting the significance of flexible, credit-based programme structures in order to meet the needs of an expansionist higher education agenda.

Part of a largely government-driven response to the challenges of the knowledge-driven economy has been a focus on higher education as the producer of graduates with key skills needed for employment. This has led to a sustained focus on student autonomy and capability (Stephenson & Yorke, 1998). Work-based learning can be viewed as one aspect of this development as it is essentially learner-centred (Osborne et al., 1998), but it has a range of additional dimensions when the student is a work-based learner rather than a student engaged in work placement or some other form of work-related learning.

In the early 1990s the UK Employment Department funded a range of higher education development projects focusing on higher education and work. Most of the first round of funded projects focused upon student placement, but a distinctive approach was taken by the Middlesex University project which centred upon the identification and accreditation of the ‘curriculum in the workplace’ (Naish, 1995). In 1996 the comprehensive overview of work-based learning in UK Universities in the Department for Education and Employment funded review undertaken by Brennan and Little (1996) highlighted:

- negotiation between key stakeholders (the individual, employer and the university)
- the multiplicity of approaches to work-based learning
- how work-based learning challenges the role of the University as knowledge provider and validator
Brennan and Little (1996) are essentially discussing knowledge as educationalists. Knowledge is described as either:

- **Mode 1 knowledge**—linear, causal, cumulative; a closed system; rooted in disciplinary authority and therefore reductionist; publicly organized and funded.
- **Mode 2 knowledge**—multivariant, unsystematic; an open system where the users are creative users rather than passive beneficiaries; multi-disciplinary; produced in the wider social context.

University work-based learning appears to align more closely with mode 2 knowledge, but Brennan and Little (1996) make a telling point that as long as the university is the validator then university work-based learning cannot be defined purely as mode 2 knowledge. Nevertheless, the mode 1 and 2 distinction is a useful frame of reference for considering the nature and validity of knowledge claims, as it suggests that if work-based learning has many of the characteristics of mode 2 knowledge then it may be inappropriate to apply mode 1 research paradigms and validity criteria to it. Work-based learning is by design and necessity concerned with knowledge which is often unsystematic, socially constructed and action-focused by the worker researcher, in order to achieve specific outcomes of significance to others. These characteristics appear to fit more comfortably within an interpretive paradigm in which the researcher is an actor involved in the partial creation (through assigning meaning and significance) of what is studied. The nature of work-based knowledge and the potential role of the university as co-creator and validator of such knowledge is at the heart of university work-based learning.

It is interesting to note that in 1996 the emerging volume of literature on knowledge management does not appear to have made any impact on the discussion of the political or economic context provided by Brennan and Little. Nor have the concepts of intellectual capital been used to illuminate the discussion of the frameworks and practices of work-based learning. Brennan and Little have much to say about processes and procedures, e.g. frameworks for assessment and quality assurance, procedures for APEL and the use of learning agreements, but do not attempt to use concepts of intellectual capital or knowledge management to explain how university work-based learning engaged with the knowledge-driven economy.

In the late 1990s work-based learning was discussed in the context of the higher education policy agenda, as articulated by Dearing (1997) and Fryer (1997), which remained one of increased student numbers and further emphasis on widening access and learner centredness. To date the discussion of work-based learning remains essentially narrow as the discourse and significances are those of the academic community of education and any intrusion of the wider needs of the knowledge society has been regarded with suspicion. For example, the paper by Garrick and Usher (1999) ‘Flexible learning, contemporary work and enterprising selves’ warned of the emerging influence of the discourse of intellectual capital and knowledge management on academic theorizing of work-based learning and the future of the university. In marked contrast at the same conference Costley et al. (1999) drew upon the already extensive operational experience of the National Centre for Work Based Learning Partnerships (NCWBLP), Middlesex University,
Developing reflective practice in professional life

301

to argue that ‘educationalists need to rethink their premises and traditional constructions about learning and knowledge … if higher education is to play a role in recognising curricula emanating outside the university and reconciling it with the expertise that is unique to higher education’ (Costley et al., 1999, p. 59). This article takes forward the discussion of this dichotomy and argues that it is a creative tension which is core to understanding the opportunities and the perils of work-based learning.

The 2001 Staff and Educational Development Association publication Work-based learning and the university: new perspectives and practices (Costley & Portwood, 2001) draws entirely upon the NCWBLP experience to provide a distinctive and a rich picture of work-based learning which:

• is based on a learning partnership where both the university and the organization are providers of high level learning. This may be explicitly through structured programmes or implicitly through normal work;
• takes into account the impact of organizational culture on work-based learning, especially in respect of the negotiation of a learning agreement between the individual participant, their organization (usually their employer) and the university as academic validator;
• not only focuses on the needs of work but explicitly focuses on work-based learning as a transdisciplinary field of study in its own right;
• uses the concept of work-based learning as a field of study to guide the recognition of learning achieved through work;
• underpins work-based project activity through the support of work-based research and development capability; and
• provides opportunity for non-university employees to take part in the assessment process.

The richness of work as a source of learning is widely evidenced (e.g. Boud & Garrick, 1999). This does not just apply to management or members of the established professions: ‘the imperatives of work mean that an understanding of learning issues is needed at all levels (Boud & Garrick, 1999, p. 2). At the same time as work-based learning offers the allure of combining individual, organizational and societal interests in an upward spiral of enlightenment, Portwood (1995) has drawn attention to its darker side. Not all we learn from experience is positive—the ability to unlearn as well as to learn is highly valuable.

In the context of the organization, knowledge has no intrinsic value; it must have a performative value, i.e. the knowledge has to contribute to the aims of the organization (Rohlin et al., 1998, p. 39). The role of structural capital in formulating organizational aims, disseminating them and focusing knowledge production and application to achieve organizational aims is crucial. Choo (1998) highlighted the role of knowledge and decision-making (a commitment to action) and drew upon the work of Simon (Choo, 1998, p. 164) to point out that the rationality of decision-making in organizations is bounded, as:

• Knowledge and anticipation of the consequences of a decision can never be complete.
Imagination must be used to anticipate consequences.

Only a limited number of possible alternatives can be considered, hence optimizing is replaced by satisfying.

The importance of ideological, political and personal preferences come to the fore in organizational decision-making and feature strongly in ‘post-rational management theory’ (Burgoyne & Reynolds, 1997, p. 164). All of this is not to downplay the importance of knowledge but to emphasize that in the social context of the organization, knowledge creation, recognition and use are not neutral or objective undertakings. Stewart (2001, p. 118) complains that ‘Knowledge management resources go unused for one simple reason: they’re not useful. Either the work isn’t connected to the knowledge or the knowledge isn’t connected to the work’.

‘Tacit knowledge’ is closely associated with situated action; it is hard to verbalize or write down (Choo, 1998, p. 116). Nonaka and Takeuchi (1995) have highlighted the significance of the ‘tacit’ knowledge of the individual and the community of practice and the difficulties such knowledge poses to the organization. Tacit knowledge is by definition unspoken and hence by its very nature is not easily identified, cultivated or harnessed. Individuals may simply be unaware of much of the knowledge which they have and which informs their action. Cope (1998, p. 189) describes tacit knowledge as deep and hidden. Yet at the same time Nonaka and Takeuchi emphasize that organizations depend upon the ability to tap into tacit knowledge as a source of innovation. The dilemma for knowledge management is how to apply structural capital to facilitate the creation, recognition, transfer and use of this intangible and potentially inaccessible resource, tacit knowledge (Myers, 1996, p. 4). Tacit knowledge can be learned by example, e.g. the apprentice learning from observation, and may be shared by whole communities of practice. Wenger (1991) has highlighted the key role of communities of practice in knowledge creation and use.

The knowledge of teams may be more than the sum of the individual parts due to partial and complementary knowledge (Choo, 1998, p. 118). The use of reflexive practice (e.g. Baumard, 1999; Moon, 1999) has been advanced as the key to the revealing of the ‘non-expressed’ by thinking about one’s own actions and analyzing them in a critical manner, with the purpose of improving practice. The difficulty of this process is compounded by the organizational context described by Baumard (1999, p. 12) as ‘fragmented and multi-dimensional operative fields with their own ceremonial conformity’. A consequence of fragmentation is that bounded rationality often functions at the local level within ‘cognitive bulwarks and territories’ (Baumard, 1999, p. 14). Knowledge is thus ‘subjective in nature and intimately linked to the individual or group generating it’ (Baumard, 1999, p. 17).

It follows that a key concern for organizations must be the facilitation of the recognition of knowledge, e.g. through reflexive practice, and the reduction, as appropriate, of barriers to the socialization of knowledge, i.e. making tacit knowledge explicit (Nonaka & Takeuchi, 1995). For individual knowledge to become organizational knowledge, and thus fully contribute to the intellectual capital of the organization, it must be shared and accepted by others (Eden & Spender, 1998,
p. 216). Sharing will often involve codification of some sort, e.g. entry into a database under certain fields, or submission of a formal report. Baumard (1999, p. 206) points to the danger of ‘fossilisation’ of knowledge and asserts that ‘organizations tend to privilege formalization and combination whereas their critical resources rest upon the versatility and renewal of their collective tacit knowledge’. Nahapiet and Ghoshal (1998, p. 253) also note that ‘organizational routines may separate rather than co-ordinate groups within organizations, constraining rather than enabling learning and the creation of intellectual capital’.

With so much attention paid to tacit knowledge in the literature it would be easy to assume that explicit knowledge is unproblematic. This is certainly not the case. Nonaka and Takuechi (1995) emphasize that it is equally important to be able to internalize explicit knowledge in order to translate it into implicit knowledge, e.g. so that individual behaviour conforms to principles and procedures by habit, as under some circumstances this may be necessary for high levels of performance.

From the previous discussion of tacit and explicit knowledge it is already apparent that capturing knowledge for codification is no easy thing. Nonaka and Nishiguchi (2001) have contested whether knowledge can be managed, and talk instead of ‘knowledge emergence’, the importance of care and the need to create ‘ba’ (a platform in space and time) for knowledge to flourish. Nonaka and Nishiguchi (2001, p. 13) believe ‘what knowledge management should achieve is not a static management of information or existing knowledge, but a dynamic management of the process of creating knowledge out of knowledge’. The role of the manager is one of nurturing knowledge by creating space. This is indicative of a movement away from seeing structural capital primarily in terms of computer databases and a greater emphasis on the critical importance of facilitating direct human interaction; i.e. technology should be used in a supporting role, it should not be the driver or a barrier.

Knowledge management and intellectual capital literature suggests that despite the importance attached to knowledge and learning and the rise of the ‘corporate university’ the university sector is not generally seen as having a significant role beyond the provision of general management courses (for example the MBA). In contrast the development of work-based learning in the UK university sector appears to offer a focus on facilitating mode 2 knowledge production and the opportunity to achieve a level of customization of provision through partnership between the university and the organization. Work-based learning appears not only to be an imperative for individuals and their employers, but also for universities as they seek continued relevance and funding in the twenty-first century.

Case study

This section reviews an innovative work-based learning (WBL) programme, based in a university context (Queen’s University, Belfast). The scheme enables professionals to develop new skills within a working context in partnership with their employers in both Small Medium Enterprises (SMEs) and large organizations. The employers participate in the design and delivery of several types of provision, which give the
students flexible entry and exit at several levels of accredited awards: Certificate, Bachelor’s Degree, Diploma and Masters level engagement. The university in turn provides the input of a full-time academic, with one-to-one support on campus and on site.

The highest level of award, the Masters Degree, presents perhaps the greatest challenge for the tutors in terms of measuring and assessing the real value of the programme. The case study examines this issue, using as its main sources of evidence the students’ and employers’ perceptions of the advantages and disadvantages of reflective practice in relation to professional development in a work-based learning context. The discussion will attempt to answer the following research question: have the participants of the programme become more reflective as a result of their work-based learning experience?

The concept of work-based learning has hitherto received a lot of contradictory interpretations. Among researchers, some perceive learning to be only that activity which takes place in formal settings, while others assess incidental learning (learning which takes place as part of one’s daily routine), to be of equal importance and value. A particular emphasis is placed on the participants’ capacity to engage successfully in reflective practice, before, during and after the completion of the programme. One fundamental complaint in relation to contemporary society is how heavily institutionalized most of us feel within our working contexts. Very frequently, both the significance and value of our day-to-day actions escapes us due to the exercise of rapid operational rhythms. Thus the opportunities for engaging in a deliberate process of reflection are narrowing. We could argue that work-based learning and reflective practice should be viewed as closely related and complementary processes. If work-based learning is to mean anything, then it has to involve changing the ways that the workplace and the work experience are commonly perceived and regarded. We must try to get beyond the traditional notions of work, workplace and the value of the work experience. It is often felt that a function and emotion isn’t validated, or a moment real, until deliberately reflected upon. The case study concludes with an outline of the next stage of the review which is designed to focus on assessment techniques for on-site evaluation of the technical and higher level skills which the Masters programme also aims to develop.

**Background/context**

In recent years, UK universities have been encouraged to ‘reach out’ to the business community by being invited to boost their funding through the government funded Higher Education Reach Out to Business and the Community Fund (HEROBC, www.hefc.ac.uk/Reachout/herobc.htm). This programme is designed to increase university-community links. Industry is continuously changing and new methods of manufacturing production demand that employees exercise greater individual responsibility and autonomy as well as flexibility and adaptability in their working context. There is generally uncertainty over what defines and is included in the work-based learning term. Everyday understanding suggests that work-based learn-
Developing reflective practice in professional life

ing is learning in, from, through, to and at work. Mezirow (1991) classifies workplace learning into three forms:

- Instrumental learning focuses on learning aimed at skill development and improving productivity.
- Dialogic learning involves learning about the individual’s organization and their place in it.
- Self-reflective learning is described as learning which promotes an understanding of oneself in the workplace and provokes questions about one’s identity and the need for self-change, involving a transformation of the way a person looks at self and relationships.

All three domains are integrated when learners become sensitive to why things are being done in a particular way, and critically reflective before accepting given solutions to problems or methods of practice. Mezirow (1991, p. 183) conceptualizes transformative learning as development through challenging old assumptions and creating new meanings that are ‘more inclusive, integrative, discriminating and open to alternative points of view’.

Work-based learning (WBL) can provide opportunities to develop these necessary skills and as a WBL manager in the university sector, it is a prime concern to identify the most productive knowledge, training and development as key sources of sustainable advantage for the participants. Learning at, from, through and for work is the essential definition of WBL and its unique feature is that it exploits the university’s expertise in professional development and academic expertise in partnership with a working context that situates the learning and provides practical support.

Though work-based learning can develop the learner’s already acquired industrial and/or academic knowledge, it can be particularly transformative in relation to those for whom the overwhelming focus of their experience has been the factual or numerical outcome. To date we have found that the majority of the students taking part in the Masters programme have come from a science/engineering background and have relatively specific roles to play in their organizations. However a key feature of the process, reflective learning and practice, appears to prove confusing for many of them, not only in terms of its literal function (i.e. how does this ‘thing’ work?) but also in terms of its perceived value to their professional lives. To add to the problem, the employers frequently send the mixed message of blessing the academic involvement in assisting the technology transfer role but not being able to commit to change the very institutionalized context within which they have been operating. In order to appreciate and in turn make use of the value of such skills as negotiation, reflection and active involvement and participation of general human resources, we feel that it is necessary actively to replace the traditionally established top-down approach which most organizations continue to espouse.

In tandem with the latter, we have found that the Masters students who join the work-based learning programme are generally not used to recognizing areas of ‘greyness’ in their professional practice; i.e. they often have a mindset which views evaluation and improvement narrowly in terms of success or failure, which usually characterizes industrial product testing rather than processes of continuous improve-
ment. This type of approach militates against reflective practice, which is generally more suited to viewing improvement and skill development as processes of refinement.

Another dimension of the context in which the programme is placed is the comparatively recent recognition by both universities and commercial/industrial settings that the partnership has many benefits. To take one example, it is possible for the university side of the partnership objectively to identify bad habits which otherwise become consolidated in organizations in which the working rhythms do not allow for such awareness. This in turn raises the issue ‘if a problem is not recognized as a problem is it a problem at all?’; i.e., the organization, and in particular its employees in work-based learning programmes, may not, initially at least, be able to identify problems that are amenable to resolution through reflection and improved practice.

It is therefore one of the programme’s major goals that the concept of reflective practice will gradually promote the participants’ understanding of their roles in the workplace and provoke questions about their identity and the need for self change. In essence, participation in the programme demands that each person transforms the way a person looks at themselves and their relationships. It had been observed over a period of time that despite good intentions, no tangible evidence remained at the end of the process as proof of change in terms of the participants’ approach to their working and/or personal lives. The frustration was increasing when we soon realized that there was no specific mechanism in place to monitor any changes and that even if these modifications were indeed occurring they would have probably entirely bypassed us since we were only vaguely aware of what we were looking for, though convinced that the entire programme had to be more meaningful!

Most of the participants in the Work-Based Learning Masters programme gained a place almost as a bonus by the already established partnership of the university and the organization; therefore any financial commitment was substantially covered by the two partner institutions (i.e. workplace/university), thus leaving the individual participants free from any money worries. Evidently helpful as this might be to any student, it couldn’t help but be noticed over time that such a facility was almost entirely taken for granted by the recipients (employees/students) who started viewing the entire programme as a ‘freebie’ rather than a challenging educational experience, which after all was what we intended it to be!

As part of our structured learning sessions, the participants were frequently encouraged to volunteer information on the applicability of the newly acquired skills (through the Masters programme) to their workplace, or, indeed, their own thoughts on how much of this programme learning was actually affecting them in their day-to-day routinely exercised activities. This was done through a variety of means (i.e. discussions, written exercises, group work, etc.). The responses for quite a while were uninspiring. The students continued to view the programme as an entirely discrete part of their lives which, sad as it was, we could cope more easily with than the fact that they also saw no need to integrate it. It was fine left alone!
Developing reflective practice in professional life

Methodology

After careful consideration of the objectives of the review, an action research approach was chosen as the most appropriate method. One of the key features of the review was to identify ways for the tutors to promote reflective practice through developing opportunities for the participants of the programme to improve their work. This reciprocal involvement and relationship of people is best served by an action research methodology. Though the results of this piece of work are going to be of significant value and importance, the emphasis of the exercise is generally placed upon the process and what the latter teaches, both to the researches and the students (participants), in order to best inform current and future practice. This type of research does not by its nature involve a product as such, rather it is people-centred. However, as explained earlier, any changes which are generated can be viewed as the products of this research.

The Action Research Process

As a first step in setting up the programme and designing its parallel evaluation through action research, it was necessary to engage in a substantial period of reading and research in order to understand the underpinning work-based learning research and assessment methods and appropriate industrial working practices. This accomplished, the second step was to consult with other academic colleagues about possible ways to engage the students in active reflective practice. Three questions were identified to provide a focus for developing new ideas and practices:

- Why would professional students need to reflect?
- Why are reflective employees useful to employers and themselves?
- What is the best way to develop routine reflective practice?

These questions guided the development of the programme which at the time of writing has thirty students, all employees of professional organizations or SMEs.

The data for the research included observations from visits made to the students in their workplaces (on three occasions each) and narrative records kept by the students themselves. These latter data comprised a learning journal (diary) which was kept over the course of the academic year. The journal was divided in two sections: ‘What happened (diary of events)?’ and ‘What did I learn?’.

The students were encouraged to record in this diary any events which were of significance to them as individuals, both in their workplace and in the university, adding a third section in which they could record an answer to the question: ‘Would any of these issues have been overlooked if I wasn’t undertaking this programme?’

The initial assessments of the students’ work and journals quickly revealed the extent of reflective practice the students had accomplished. In order to focus on the development of such skills, six of the students (two from each year) with the least capacity for reflective practice were selected for further observation.

In order to promote reflection on the whole programme, the participants were asked to furnish a written separate section on their ‘own reflections’. This turned out
to be a very revealing part of the research where most of the students demonstrated unfamiliarity with the process and importance of self-assessment. To probe this aspect of the work, participants were encouraged to view this section as reflections on their journal work and to divide it equally in two sub-categories: ‘What reflective judgement means to me now?’ (the before question) and ‘What changed?’ (the after answer).

A series of semi-structured interviews, four sessions with each student, were organized to enable a range of issues to be addressed, i.e.: ‘Do you feel that the work-based learning programme has enabled you to make your learning at work explicit?’ If the response was affirmative, the respondents were probed as to whether they had engaged in a process of deliberate reflection and analysis. If not, they were asked to comment on why this was so. The students were also asked to concentrate on those areas of their work in which they needed to focus in order to improve their personal and working lives.

We found that the introduction of this type of work which incorporates learning journals and diaries with relevant structured sections, contributes and encourages reflective learning and practice; thus enhancing the learning experience for all of the participants of the programme, students and tutor.

Invariably the students feel that although no workplace challenges can be predicted their own capacity to cope with the ‘unknown’ was significantly increased through learning to ask more of the right questions about the processes, and seeking constant reflection before, during and after the event. The course encouraged and enabled the students to engage actively in their own action research through developing their capacity to engage critically in the exercise of reflection.

Assuring the fairness and accuracy of the judgements

At the beginning of the research, two validation groups were set up—one comprising the students (as research participants) and the other comprising three academic colleagues and a critical friend (the latter being the term used in action research to describe a person who is in a close academic and physical proximity to the researchers and who provides advice on, encouragement and validation of the research).

How was the process of the programme modified by the research?

The students were introduced to a method of self evaluation and assessment which gave them an opportunity to show what they own as knowledge, what they have learnt (as a result of their work), what they can do in the future to improve, and how they appreciated their own learning experiences through a process of reflective practice. Jarvis (1994) defines ‘Reflective Learning’ as a process which includes contemplation, reflective skills and experimental learning.

Through this the participants were offered the opportunity to view unresolved situations not as ‘failures’ but as learning challenges and stepping stones of knowledge for the future. This enabled them to celebrate their current efforts and achievements as opposed to lamenting inevitable ‘losses’.
Employers participated in their employees’ learning and their own learning through actively engaging them in the above described process. A shift in the mindsets of employers and employees was evident and is illustrated by the following selection of comments made:

- Work-based learning fits very well with the ‘Investors in People’ philosophy of developing individuals within the context of organizational aims. (Employer)
- This project has provided me with a greater understanding of the organization, the products it manufactures and the environment it operates in. (Employee)
- It allowed me to negotiate the areas I wished to study. I was easily motivated to do work for this course. (Employee)
- Had this project been conducted outside the work-based learning programme, I might not have carried out such extensive background reading and research, and a number of important issues could have been overlooked. (Employee)
- This work gave me the opportunity to think about the overall team effort in my organization instead of focusing only on my own functional area. (Employee)

**Conclusion**

The research reflects the changing nature of the socio-economic and political significance of work-based learning, which can be understood in the context of the needs of the learning economy and the related global policy initiatives for lifelong learning. It has raised also important new questions such as:

- Can one assume that lack of reflective practice is exclusively associated with technical professions?
- Does specific ‘product marketing’ in industry require ‘before’, ‘during’ and ‘after’ reflective activity?
- Do more career pathways ‘open up’ to technical profession employees who actively engage in reflective practice?

Both Kolb (1984) and Eraut (1994) discuss the phenomenon of ‘situational knowledge’. Undoubtedly, both the instigators of the concept as well as the recipients had a lot to learn from this innovative project. The following section indicates some of this learning.

**Reflections on the importance of the research**

*For the researchers.* We believe that the research has achieved what it set out to do, which was to evidence the lack of and need for reflective practice amongst professionals. We have now become aware of the paramount need to be self-reflective in the course of encouraging students to engage in reflective evaluation. At first we tended to approach the students on an individual basis, attempting to appreciate the nature of their respective projects, and to make them all individually aware of the need to become more familiar with the conceptual tools of the social sciences. However, we began to appreciate the need to consider the group and the course as a whole, and to try ourselves to make more explicit connections between the
different students’ learning experiences. We came to appreciate that there was a
danger of the teaching context being too dependent on the particularities of the
individual projects. Following our advice to them all to make connections between
different types of knowledge and learning, we too needed to construct a clearer
conceptual vision of the programme. To this end we felt that the question of our
own self-reflection and need to make connections would be central. Thus, we tried
to draw more thoughtful comparisons between the issues and problems which arose
in each case, and to use the experience acquired in evaluating the first case to inform
our evaluation of the second and so on.

For the workplace. It is very important that the field will be continuously developed,
improved and critically analyzed against the needs and demands of the people who
are availed of its educational, experiential and learning theories. We believe that this
piece of research is compatible with the above values.

For education. The results of this work cannot be considered to be the final analysis
and will constantly be subject to alterations, changes and modifications with the
ultimate aim of continuous improvement of our working practice. Our colleagues in
the area of work-based learning in the university have agreed to look into the
following issues, resulting from the research, as topics to be actively incorporated in
the teaching of the work-based learning programme from the next academic year
(2004–2005). Participants will be asked to:

- analyze critically a work-related situation or theme to a negotiated brief using
  appropriate methods;
- solve pertinent structured problems both individually and, if appropriate, in
  groups;
- report on learning achieved through the project, in an appropriate reporting style;
- make recommendations and/or suggest guidelines for change, based on project
  findings;
- reflect critically on experience and/or practice;
- research and critically evaluate relevant information independently;
- plan and implement personal transferable skills objectives for improving their own
  learning and performance.

It is felt that this approach will fully address the need for university-based
education to assist professionals to engage actively in all aspects of reflective learning
and practice and ultimately to achieve a culture change in which they have the skills
to adapt and cope with issues as they arise.

Notes on contributors

Elda Nikolou Walker is currently a Senior Teaching Fellow at Queen’s University,
Belfast, Northern Ireland.
Professor Jonathan Richard Garnett is currently the Director of the National Centre
for Work-Based Learning Partnerships (NCWBLP) at Middlesex University.
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