Original article

Professionals under pressure: contextual influences on learning and development of radiographers in England

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Abstract

The role of radiographers has changed significantly in the last 20 years, as the demand for radiography services has increased markedly and the work of radiographers has become more complex. This article is framed within a narrative, drawn from previous work of how radiography has become a 'profession under pressure' and a contemporary analysis of how the context in which radiographers are working influences their opportunities for learning. Examples of the interaction between learning and contextual factors are drawn primarily from discussions that took place during two focus groups with radiographers. The analysis, using a framework developed by Eraut *et al.* (2004) indicates that contextual factors, such as the allocation and structuring of work, relationships at work, and participation and expectations at work, are significantly influencing possibilities for learning in the workplace. This suggests that current proposals to change the way in which radiographers' work is structured may enhance their opportunities for learning. Similarly, changing patterns of relationships at work, based around skill mix proposals and changing career structures, could also increase radiographers' opportunities for learning, both from other radiographers and from the other healthcare staff with whom they inter-relate. Expectations about training and development from staff and their supervisors, often enshrined in departmental or institutional policies, can also be seen as influencing both the possibilities for learning and attitudes towards continuing learning. The article concludes by emphasizing that critical learning factors, such as the provision of appropriate mechanisms for feedback and support, need to be addressed if the possibilities for enhanced learning afforded by contextual changes are to be realized in practice.

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Introduction

This article is framed within a narrative of how radiography has become a 'profession under pressure' and an analysis of how the context in which radiographers work influences their opportunities for further learning. Examples of the interaction between what Eraut *et al.* (2004) refer to as 'learning' and 'context' factors are drawn primarily from discussions that took place during two focus groups with radiographers. However, the focus group discussions were themselves informed by the results of interviews undertaken as part of two previous investigations. The first study was an analysis of the skill implications of changing patterns of the work of radiographers and physiotherapists employed in seven hospitals, and highlighted the range of pressures impinging upon the development of professional identities (Brown *et al.* 2000). This study included case studies of three hospitals offering a full range of radiography services and highlighted how each service was 'feeling stretched to the limit'. The second study was part of a research project on 'Vocational Identity, Flexibility and Mobility in the European Labour Market (FAME)', one aspect of which involved looking at the development of occupational identities in healthcare in Estonia, France, Germany, Spain and the UK (FAME Consortium 2003). This involved interviewing 18 radiographers (all female), 15 of whom were employed by the NHS in public hospitals, two of whom were employed by a company offering mobile radiography services for hospitals, and one who was a former radiographer. The radiographers worked in a variety of roles in general and specialist radiography and had varying levels of qualification. The age of the employees ranged between 24 and 59 years, and their years of work experience extended from 2 to almost 40 years. Once again, the 'pressure' they felt at work was the dominant theme, and the other 'key issues' were skill mix, training and continuing professional development (CPD), and job satisfaction.

Subsequently, we were contracted by a Workforce Development Confederation (WDC) to undertake both quantitative and qualitative analysis of future skill requirements in the region. At a round-table meeting with human resources managers of two NHS trusts and the WDC, it was decided that one of the key groups for qualitative study should be radiographers, and that recruitment and retention should be studied in addition to the 'key issues' previously identified.

Methodology

Given that individual interviews and case study visits had been undertaken in the previous studies, it was felt that focus groups might offer a productive way forward, as this would enable participants to share thoughts on the the key issues that had already been identified. Therefore, two focus groups with radiographers were arranged. This proved organizationally quite difficult, precisely because of pressures of work on the radiographers. Indeed, the WDC provided financial support so that temporary cover for focus group participants could be arranged. In practice, this was not always practical or necessary, but it helped to gain agreement of line managers to release staff. Sessions were also arranged around lunch-time so that staff time away from the department was minimized, although this did also mean that staff had to give up their lunch break; but they were given lunch!

It had been agreed that the three hospitals would provide us with a list of staff and that we would then contact potential participants directly, seek suitable times and dates and arrange for release from departmental duties. The aim was to bring together staff with a variety of experiences and backgrounds, including supervisory staff, and although we had little room for manoeuvre, this aim was achieved. Although there was an outline structure based around the chosen topics (recruitment and retention, skill mix, training and continuing professional development, and job satisfaction), participants were encouraged to raise and discuss job-related issues that were important to them. In practice, 'job satisfaction' acted as a category that picked up almost all other issues that participants raised. A one-page questionnaire was distributed prior to the meeting in order to gather mainly individual background details.

The method adopted did not constitute a 'representative sample', but it facilitated discussion on topics that were important for many radiographers

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at the time, and all the participants welcomed the opportunity to express their opinions about aspects of their professional life in discussions that were very lively and collegial. The focus group discussions were held in June 2002 at two hospitals, involving 10 participants from three hospitals (SCoR 2002). Each focus group had five participants, lasted just over 2 h and was supported by two researchers. One researcher introduced the key topics and facilitated the discussion, while the other took charge of the tape recording and made field notes. Four months later we presented our findings to a group of four participants and the Director of Human Resources for the WDC. The participants were in broad agreement with the findings, although the focus of that meeting was less upon validation of the data than on seeking a way forward to address some of the concerns raised. Some of the details that follow may be specific to particular individuals and hospitals, but the central tenets of the broad narrative have been triangulated by activities, both there and elsewhere, before and after the focus group discussions.

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The characteristics of the 10 participants were as follows:
- role: eight diagnostic, two therapeutic radiographers;
- grade: four superintendents, six seniors;
- initial training: three degree, seven diploma;
- continuing training: six graduate or postgraduate qualifications;
- years in service: 1–5, two; 6–10, two; 11–15, two; 16–20, none; > 20, four;

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- hours contracted per month: 140;
- hours worked per month: 165–180, six; 180–200, none; > 200, four.

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The radiographer's (changing) role

Radiographers use a range of equipment to produce high-quality images in order to diagnose injury or disease (diagnostic radiography) or to work as members of oncology teams in the treatment of cancer (therapeutic radiography). The precise skills needed depend on the equipment used as well as the service provided. Technical and professional knowledge, team working and interpersonal skills, and sensitivity, are required. Radiographers are at the interface between the patient and the clinician and need well-developed interpersonal skills (Brown *et al*. 2000). The skills of patient management have increasingly come to the fore as radiographers have to deal with patients with very different levels of tolerance and anxiety and under a range of medical circumstances (Eraut *et al*. 1998). The role of radiographers has changed significantly in the last 20 years, and the demand for radiography services has increased markedly. A greater number of radiographers are required and their work has become more complex; the technical and information technology (IT) skill demands are increasing and the underpinning knowledge base is expanding. The range of tasks that radiographers have to perform has also increased (White & McKay 2002) with the development of many subspecialities (Nightingale & Hogg 2003).

Besides using X-rays and ultrasound, radiographers use techniques such as computerized tomography (CT) scanning and magnetic resonance imaging (MRI) to produce detailed three-dimensional anatomical images and sophisticated pictures of any part of the body to help in the early detection of disease and injury. Positron emission tomography (PET) can produce computerized mapping of the brain's physiological functions, while single-photon tomography can be used for measuring cerebral blood flow and for cardiac imaging. The clinical uses of images produced by radiographers are now used in many hospital departments and functions. The development of small specialized scanners, as well as whole body scanners, has extended the range of diagnoses that are possible using such technologies. The point of delineating these techniques is to highlight that the high-quality images produced are transforming significant aspects of the work, not only of radiographers and radiologists but also of other clinical specialists.

The images produced by radiographers can detect very early signs of disease, but patients in some areas of the country have to wait for a number of months to be scanned because of shortages of radiographers (Coombs *et al*. 2003; Department of Health 2004). In both the focus groups, as in the earlier individual interviews with radiographers, it was clear that they felt themselves to be a 'profession under pressure'. Using the framework developed by Eraut *et al*. (2004), it will be shown that 'context' factors, such as allocation

and structuring of work, relationships at work, and participation and expectations at work, are significantly influencing possibilities for learning at work.

Contextual influences on learning: allocation and structuring of work

The shortage of radiographers causes a variety of problems for patients, staff and management. It can lead to long waiting lists and, 'in some cases the facilities are there, but cannot be fully used because of a lack of staff'. This, in turn, makes staff feel that they are under constant pressure: 'firefighting is the name of the game' and 'you are constantly involved in a juggling game'. Staff shortages also contribute to staff having to work long hours and a feeling of not being able to spend enough time with patients (Coombs *et al.* 2003). Brown *et al.* (2000) highlighted how coping with tough performance targets, in relation to patient throughput, waiting lists, waiting times and so on, while often being understaffed and facing sharply increased demand for their services, was very stressful for many staff. The shortage of radiographers is well documented (Department of Health 2004), but the point strongly made in one of the focus groups was that, even if a service could fill all of its allocated posts, it would still be under pressure because the demand for its services was increasing at such a rate. In response, departments often extended opening hours and introduced more flexible patterns of working, although these goals could sometimes conflict.

The introduction of family-friendly policies has had some success in improving retention, but some younger radiographers thought that this had introduced some unfairness by shrinking the pool of those eligible for on-call duties. Being one of a small group, 'working nights and almost every holiday', could build up resentment and one participant cited this as a major factor in her decision to seek work elsewhere. She plaintively remarked that: 'I have a family too'. Similarly, another participant pointed out that, 'the service was relatively well staffed until 3 pm, then there is suddenly just two of us to cope with everything'. Dissatisfaction was firmly associated with pressures at work circumscribing opportunities to establish a rapport with patients.

Recent changes in work routines are giving radiographers more responsibility, but they are often allied to other changes that are increasing the pressure on staff: 'We are expected to do more for each patient – checking allergies, giving injections, scanning, but … to see the same number of patients as previously. Patient throughput must be maintained.' Another example of work intensification was:

> Where previously 6 min were allocated per patient for a chest X-ray plus 4 min in more severe cases (as when someone was physically incapacitated and so on), now there are only 3.5 min, without the requirements having changed.

To compensate for this, 'we have to talk faster, with the patient possibly losing out on receiving information, and act faster: for example, we tell patients there is no need to take their shoes off'. The increasing pressures in general radiography services were also making specialist work more attractive: for example, the two participants working in breast care services emphasized that they still had time to develop relationships with patients.

Earlier attempts to impose greater flexibility in work and expect staff to accept resulting changes in patterns of work organization were seen as stressful, as when a single radiographer was on-call at night with responsibility for performing the full range of possible duties. The allocation of on-call duties was a major discussion point raised in both focus groups. It was felt to be particularly problematic for less experienced radiographers who did not feel confident to undertake the full range of duties that might be required, especially when they had no one with whom they could consult. Similarly, coping with an increasing pressure of work meant that opportunities for learning and development based upon everyday work activities were reduced: 'for example, there is no time to talk to the radiologist about the diagnosis based on the scan and to learn from this'. Other situations that were particularly stressful included: 'switching to working on new machines when you only know about 80% of their capability'. Two of the participants working in general radiography services

took this general dissatisfaction with pressures at work and the resultant constraints on opportunities for learning and development a stage further. One was temporarily leaving the NHS in order to get further specialist training, while the other was resigned to being at the end of a long queue to get support for such training from her department. Managers were aware that access to opportunities for continuing training could be important in staff recruitment and retention (Payne & Nixon 2001). However, 'sometimes promises were easier to make than to keep, given the limited openings for some training and because training could sometimes be cut back owing to pressure of work'. Four of the more experienced participants had studied part-time to get further qualifications, but they recognized that this was now much more difficult because staff were typically working more intensively and for longer hours than in the past. The consequences of this increasing demand for services also meant that, in addition to the difficulty in getting release for formal training, informal support was becoming less available. In particular, some senior staff felt that they had less time to devote to training because of the increased time they spent on departmental management responsibilities.

The prevailing mood, however, was not one of despair. Partly as a consequence of continuing skills shortages and recruitment difficulties, all departments were thinking about the use of assistants and other support staff and the challenges of role extension. Skill mixing was involving changes to both job content and departmental structures (Department of Health 2003). Both groups felt that a corner had been turned and that the new career progression structures and skill mix proposals were evidence of a concerted attempt at improvement. It does, however, show that the allocation and structuring of work significantly affect possibilities for learning. Changing how the work of radiographers is structured holds out the prospect that opportunities for learning will be enhanced.

Contextual influences on learning: relationships at work

Opportunities for learning at work depend partly upon the nature of relationships in the workplace (Eraut *et al.* 2004). For radiographers having to learn new ways of working, two sets of relationships were particularly important: one with their peers and the other with doctors. All participants pointed to the importance of learning from peers, whether this was formalized through 'cascading experience' or achieved by more informal means. In one focus group it was pointed out that the newest member of staff was particularly valued in this respect because she was seen as bringing not only new forms of expertise but also a particular talent for helping others learn. This was an interesting counter-example to the cases where more experienced practitioners, without a degree, felt threatened by, 'seemingly more knowledgeable and more critical graduates who dare to question the norm' (Sim, Zadnik & Radloff 2003).

Radiographers also have to work with other staff, and the ability to communicate effectively across disciplines has become a core competence (Brown *et al.* 2000) as their roles have expanded. However, both focus groups provided examples of where radiographers had been given greater responsibilities, for example in the interpretation and marking up of X-rays, only for some doctors to ignore their expertise. For example, participants recalled incidents when radiographers marked films to indicate the location of a problem and some doctors just ignored their marks, with the result that some patients who had been discharged had to return several days later when the original indicative diagnosis was confirmed: 'some doctors are nice' and value the contribution of radiographers, 'but quite a few are arrogant and rude'. Another example given was the fact that radiographers were not invited to a scheduled meeting of the Accident and Emergency department for which they worked. In yet another case, discussions were taking place about support for medical students, and a suggestion that radiographers could make a contribution was rebuffed with the dismissive comment, 'what can radiographers teach a medical student?' Both focus groups thought that the skill mix proposals and the national pilots already underway would help to shift attitudes towards a greater readiness for the sharing of expertise. On the whole, skill mix was regarded in a positive light, not least because career structures

were finally being addressed (SCoR 2002). Nevertheless, the exact division of labour between radiologists and radiographers still needed to be negotiated, and a decision on the grading and career progression of assistant radiographers was still pending at the time of the research. The two groups welcomed both the idea of an 'advanced practitioner', taking on an extended role while still being involved in practice, and that of a consultant practitioner, providing leadership in practice. One focus group participant expressed the view, shared by both groups, that: 'about 6 years ago it appeared as if nothing was going to change, now they are changing the career structure and someone is finally listening to us'. There was a feeling that the role expansion (Nightingale & Hogg 2003; White & McKay 2004), skill mix proposals (Department of Health 2003) and changing career structure (Price, Miller & Mellor 2002) were symptomatic of an attempt to address some long-standing problems, and that these would result in more recognition for radiographers as well as increasing the opportunities for learning both from other radiographers and from other healthcare staff with whom radiographers interrelate.

Contextual influences on learning: participation and expectations at work

Hospital radiographers have strong occupational identities, but all but one of the participants commented that radiography had not been their first choice of profession. Radiography was seen as different, in this respect, from physiotherapy or nursing, and this reinforced the point that new entrants had to learn to become radiographers. On the other hand, since 1993 radiography has had an all-graduate entry (Pratt & Adams 2003). This meant that as science graduates they also have opportunities to work outside the health sector, often at a higher salary. One participant remarked, 'for example, last year only just over half the graduates from one training course went into radiography' and that, 'the old-style radiography training qualified people only for radiography. The new degree course opens doors to other careers as well'. Also during their studies students get an idea of

what radiography is really about ('stress, direct responsibilities, physically moving people') and may decide to change careers.

In contrast, when training was hospital-based, radiographers did not just receive their technical training, they were socialized into becoming, 'members of a community with links to particular departments in a particular hospital'. There was a real sense of belonging to an organizational and/or departmental community as well as their occupational community (Lave & Wenger 1991), whereas at the end of university-based training newly qualified radiographers still have to find their place within a particular work community. As a result of work pressures, established members of staff do not always pay sufficient attention to supporting newcomers and, as one participant pointed out, this meant that: 'unfortunately they are often left to sink or swim'. As a result, rather than relying upon formal support, newcomers were often dependent upon how successful they were in organizing support for their own learning.

The expectations that radiographers have about opportunities for formal training also exercise a significant influence upon their attitudes towards possibilities for learning. CPD is seen as central to individual career development (CoR 2002) and to improving the whole healthcare system (Davies & Nutley 2000). However, in practice, departments that are under-strength, and working at full stretch, are sometimes reluctant to release staff for training. The importance of CPD is officially recognized, but that commitment may be compromised in practice. There was also an expectation that CPD would enable an individual to learn the additional specialist skills required for work in, for example, mammography, ultrasound and skeletal reporting. Progression into specialist roles or supervisory positions acted as an incentive for some staff to undertake CPD, and all the senior participants in the focus groups had followed this route:

> Training for the first practitioners to use new equipment is usually quite good. The departments have procedures to develop protocols learned from experience of the

equipment in use. Thereafter, an experienced practitioner might train others in a way that cascades effective ways of working.

In other respects, however, access to opportunities for CPD could become an issue when, for example, staff shortages in general radiography mean that existing staff have little access to further education and training and few opportunities to move into new areas. Similarly, several examples were given where:

… individuals had trained to cover a particular specialism in their own time, but were not given an opportunity to use their new skills. You may need to leave the NHS temporarily in order to get training and some experience in MRI.

Radiographers have been lost because they were not given developmental opportunities.

You might need to move for specialist training; in MRI there are lots of jobs, high up the scale and you could easily move to X (a private provider of radiography services).

Indeed, one attraction of working for a private provider was that they were perceived as offering better access to training, an advantage emphasized by their recruitment advertising.

Working in a specialized area is very attractive for radiographers, particularly in those areas that are more compatible with family responsibilities. But now the whole area of career progression is starting to be addressed and: 'things look much brighter than a few years ago'. However, it was pointed out that apparently positive developments could have unintended consequences. One participant from a specialist area said that, when a radiographer moved into her area, she felt she was: 'stealing radiographers from the main department where they were under the greatest pressure'.

There was also an issue around making assumptions about whether an individual was interested in progression. For example, 'moving around is seen as

important for progressing one's career and those who stay for more than 8 years in their job are assumed not to wish to progress, without those responsible necessarily questioning this assumption'. On the other hand, some participants felt uneasy with appraisal because, 'not everyone wants to move on, some are happy to stay where they are', but appraisal is structured towards development being 'normal'. Both appraisal and training were seen as needing to accommodate both those seeking opportunities for progression and those with a commitment to their current role, particularly as over a working career most people are likely to favour continuity or change at different times, depending upon a range of personal, organizational and career goals.

Training opportunities were seen as a means of helping to recruit and retain staff, 'but this only works if the hospital can deliver on these promises'. Without cover for training, some managers felt that: 'they could not afford to let staff go on training courses', but recognized that, if they did not do so, they might have a retention problem. Alternatively, training was sometimes seen as something individuals did in their own time. This even applied to training organized in the workplace: 'the only time radiographers seem to be able to do CPD is around lunch hour and after 5 pm (whilst other services might close down for CPD)'. Another participant highlighted how, 'even where people have taken courses (including gaining postgraduate qualifications) in their own time, they may still be paid less than those who have not completed postgraduate training'. Some participants also complained that 'we do not get any time for CPD involving reflection on practice'. Other pressures came from insufficient training and CPD. It was seen as 'important' by managers, but often squeezed in practice. In one trust the training budget was used to pay expensive agency staff. There were also issues around cover for those undertaking training. Without this, staff who take up training can feel as if they are penalizing their colleagues by exacerbating their workloads. In contrast, 'the pilot project (on skill mixing) had funds allocated for replacements for those attending training – this was successful and those radiographers who replaced the training radiographers subsequently stayed on'.

Concluding discussion on learning factors

The preceding discussion aligns with the argument of Eraut *et al.* (2004), that contextual factors can significantly influence the possibilities for learning in the workplace. Using the framework proposed by Eraut *et al.* (2004), it might be instructive to conclude by examining three groups of learning factors that influence what is learned and how it is learned. These factors are: the challenge and value of the work; confidence and commitment; and feedback and support.

The most obvious challenges facing radiographers relate to the successful completion of their core professional tasks, and considerable learning results from engagement with challenging work, including managing patients under varying circumstances and working as part of a team. They also need to use technical and professional knowledge in practice, expand their knowledge base and develop their interpersonal skills and sensitivity. The exposure to a range of experience may, over time, be particularly significant in the build-up of implicit or tacit knowledge, rather than explicit knowledge (Eraut 2000). This is one reason for widespread use of job rotation in the first 2 years following graduation. The value of the work is self-evident:

> … you can literally be dealing with matters of life and death and you have to learn to cope with the tensions inherent in the job. For example, it is the responsibility of the doctor to give the diagnosis. This applies even when you can see a major problem. You need to be able to tell 'white lies': I have to say 'the film is fine' (when I know there is actually a tumour) 'just go and see the doctor in 2 days time' (when for others you tell them to go in 10 days time).

Confidence as a learner surfaces when faced with the challenge of learning to cope with on-call duties. On-call duty means being:

> … not more than 20 min away from the hospital or sleeping in, but in practice you are normally working most of the time. On-call could mean a 30-h shift without sleep. The one radiographer who is doing the night shift might have to run round to service a number of departments and still be shouted at over the phone for not being quick enough.

The radiographer on nightshift might also feel rather isolated – not feeling confident to undertake the full range of duties that might be required of them when they were on-call alone and had no one to consult about possible problems. This could be particularly stressful and thus reduce the quality of potential learning experiences. It is similar to the example quoted above of being put to work with new equipment without being fully aware of the capabilities of the machine. Confidence as a learner can be undermined in such circumstances. The existence of the many adverse contextual factors referred to above means that commitment to learning and development becomes largely an individual decision rather than a structural one. Individuals may commit to learning in their own time as the most achievable way to further their career, rather than waiting for the department to organize opportunities for further learning.

Issues relating to feedback and support could be seen in the challenge facing departments following the introduction of new equipment and how this was often handled through 'cascading experience'. In some cases it was junior staff, with more up-to-date technical knowledge, who received the initial training. They then had to 'teach' more experienced staff as well as learn from them. Indeed, one participant highlighted:

> … where a new MRI scanner had been recently introduced, there was a need for radiography staff to 'educate' other professionals in the potential dangers of using the equipment incorrectly and the need to adhere to particular protocols.

This too was sometimes a challenge, particularly where it presented a challenge to the established organizational culture. More experienced practitioners would have liked to offer support more often, but, 'we are often increasingly stretched by other duties to give as much time to supervision and support as we would wish' in more ideal circumstances. On the other hand, some participants pointed out that they had received a lot of help from more experienced colleagues, who may or may not have had formal mentoring responsibilities.

Overall, it is clear that the major contextual factors (such as allocation and structuring of work, relationships at work, and participation and expectations at work) that are so influential in shaping possibilities for learning for radiographers are all undergoing considerable change. Therefore, prospects for progress in easing the pressure on the profession are good, but only if critical learning factors, such as the provision of appropriate mechanisms for feedback and support, are addressed and the possibilities for enhanced learning afforded by contextual changes are achieved in practice. It is vital that staff are confident that their learning and development needs can be structurally supported, rather than having to depend mainly upon their personal commitment to career progress.

This article has focused exclusively upon radiographers. However, much of the analysis could be applied to other areas of healthcare. In particular, wherever there are proposed changes to occupational boundaries and the skill mix it will be important to focus upon addressing the major contextual factors and the critical learning factors that influence possibilities for learning. If that is accomplished then this could lead to enhanced learning and development, which would increase the likelihood that the proposed changes are successfully implemented, with consequent benefits to staff, patients and the healthcare system as a whole.

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Insert space between words	⋏ between words affected	#
Reduce space between letters	↑ between letters affected	↑
Reduce space between words	↑ between words affected	↑