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To reflect or not? Reflective practice in radiation therapy

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Abstract

Therapy radiographers may be empowered to contribute more freely to the multi-disciplinary professional team if they critically reflect on their inherent clinical knowledge and perspectives. Critical reflection may help radiographers articulate the rationale behind professional decisions and proposed evidence-based treatment planning and delivery protocols, and reveal knowledge embedded in practice. Documentation of professional reflection may yet become a cornerstone for continuing professional development. Despite a paucity of rigorous empirical investigation, 'reflective practice' has become focal in nursing education. Three concepts appear confused, ill defined or interchangeable in the literature: 'reflective practice', 'reflection' and the 'reflective practitioner'. Debate continues into the value of 'reflective practice' as a system: it remains problematic, it is difficult to conceptualise, it appears to have no clear or universal definition and no certain framework or guidelines for its implementation. In reflecting on action there may be strong hindsight bias which may invalidate conclusions reached. There are doubts raised about the benefits of structured models to implement reflective practice. Belonging to such an empirically based profession, it may be that educators and clinical therapy radiographers incorporate only those elements of systematised 'reflective practice' that can be empirically demonstrated to be beneficial to the profession, and will result in improved patient outcomes. There is no compelling evidence yet that any systematised 'reflective practice' is inherently more beneficial to therapy radiographers than radiographers continuing to reflect as they do now, with or without documentation.

Keywords

Reflective practice; reflection; radiotherapy; CPD

INTRODUCTION

This paper examines the clinical context for 'reflective practice', and the reasons that therapy radiographers might consider using reflective practice. In an attempt to define what reflective practice is, this paper revisits Schön's concept of the reflective practitioner. Nevertheless, three concepts still appear to be confused, ill-defined, or interchangeable in the literature: reflective practice, reflection, and the reflective practitioner. Many of the arguments put forward regarding reflective practice and professionalism can only be developed briefly, but to exclude them would be inexcusable in an examination of the issues surrounding reflective practice for radiographers. Although provocative, arguments such as these could stimulate debate about acceptance or rejection of the role of reflective practice in radiation therapy. There are doubts raised about the benefits of structured models to implement reflective practice. It may be that radiographers incorporate only those elements of systematised reflective practice that can empirically be demonstrated to be beneficial to the profession, and which will result in improved patient outcomes.

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PROFESSIONALISM AND REFLECTIVE PRACTICE

Therapy radiographers are professionals. In accor-

dance with the definitions of a profession, therapy radiographers have a distinct, discrete and specialised knowledge base (and recently an academic qualification) which is accorded primacy of place[1,2] and which differs from other 'specialisations' in depth, emphasis and practical implementation. Therapy radiographers have developed their own research base and competencies in radiotherapy planning and treatment delivery techniques. This now influences the way in which radiation oncologists prescribe (altered dose/fractionation regimes due to dose escalation possibilities) and the techniques they consider to treat patients (e.g. 3D conformal radiation therapy techniques).

In the past, role development for therapy radiographers has arisen in response to a variety of situations such as local work practices (e.g. patient care, treatment delivery and planning issues), specific radiographer interest and implementation of new technology (e.g. the introduction of CT as a standard planning tool, then the introduction of 3D conformal techniques, on-line portal imaging and interactive daily isocentre verification and adjustment) and because of the inherent job enrichment role development affords motivated radiographers. As planning and treatment delivery have become more complex in recent years, formal recognition of specialist roles and evidence-based evaluation of continuing specialist competency to practice have emerged as pertinent issues for the radiation therapy community. Due to both interest from within the profession and a shortage of radiation oncologists and demands on their time, suitably accredited therapy radiographers are now emerging who perform breast mark ups, prescribe palliative care regimes, and perform clinical patient reviews on a daily basis. Such a degree of autonomy is fundamental to any profession.[2] Radiographer role extension and development is therefore eroding traditional medical bastions and ending the concept that therapy radiographers are but agents who implement the consultant's prescription.

Within the multi-disciplinary environment which underpins Calman-Hine's[3] concept of an integrated, modern, seamless UK Cancer Service, therapy radiographers are more likely to be able to present their unique insights and solutions if they are recognised as professionals who can contribute forthrightly to the multi-disciplinary discussion. Conversely, if radiographic knowledge and expertise is not accorded the professional weight it deserves (even by radiographers), radiographers may not be able to contribute as freely as required to the multi-disciplinary team to achieve the best possible outcomes for their patients. In the past, a lack of directed critical reflection on clinical practice may have contributed to radiographers being unaware of, or undervaluing the extent of the radiographic profession's unique skills and perspectives. Could structured reflection help radiographers appreciate their knowledge and perspectives and empower radiographers to contribute more freely to the multi-disciplinary discussion?

Therapy radiographers now face the challenge of finding a method to articulate the rationale behind daily clinical actions and decisions so that colleagues can *evaluate* (based on evidence) the inherent validity of clinical decisions and actions (thus moving towards an evidence-based rationale for all procedures). Reflection may also highlight areas where radiographers need or desire further professional education. Radiographers are also asked to *impart knowledge* to professional colleagues, recently graduated or not. Some aspects of clinical knowledge appear difficult to articulate succinctly.[4] Behind clinical decisions and actions radiographers may be instantaneously pulling in myriad strands of clinical reasoning, knowledge and experience, some valid, some perhaps unquestioned and invalid. This is where radiographers could agree with Schön,[5] the originating proponent of the 'reflective practitioner', that professional knowledge is often 'tacit' or implicit and cannot be separated from its clinical context. Perhaps structured reflection would enable radiographers to identify and reveal this knowledge embedded in practice.

Benner[6] suggested that intuitive clinical decision making is the pinnacle and hallmark of an expert practitioner's clinical knowledge and experience. This may be so, but radiation therapy clinical decisions can also only be regarded as valid if radiographers can also articulate strong empirical evidence as justification for implementation. Radiographers demand no less of their radiation oncologist and physicist colleagues. It remains to be seen if present 'reflective practice' models are the tools

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radiographers can employ to help articulate the rationale behind professional decisions and proposed evidence-based treatment planning and delivery protocols.

CONTINUING PROFESSIONAL DEVELOPMENT (CPD) – TO REFLECT OR NOT?

One of the hallmarks of professionalism is the issue of continuing professional development (CPD).[1,2] There may be little justification for learners to depend on didactic experts for CPD – if it is to have relevance to the clinical practitioner, CPD learning is more likely to be practice-based, learner-centred and negotiated, and multi-disciplinary.[1] One of the cornerstones of CPD may yet be a form of documented reflection (not necessarily 'reflective practice'): the learner reflects on practical situations, implements relevant CPD activities, evaluates professional outcomes, and again reflects on resultant situations. This form of documented reflection could then:

1. Make implicit models explicit.
2. Change haphazard approaches into systematic ones.
3. Replace the *ad hoc* with a planned response.[1]

The assumption is that practitioners, as adult learners, already act like 'reflective practitioners', but are probably not aware of it. Documenting continuing clinical competence to practice may become mandatory to maintain national registration in the UK: options include professional portfolios[5,7,8] and diaries[1] that demonstrate that the practitioner is engaging in meaningful CPD. Professional portfolios may record tacit knowledge embedded in practice, which is difficult to articulate.[5] Knowledge gained from experiential CPD and identified by reflection[1] may be of specific clinical interest and value to the profession.[5] However, there is no consensus that systematised 'reflective practice' is inherently more beneficial than any other form of reflection[9,10] for these purposes.

Perhaps the worst-case reflective practice scenario is one in which systematised 'reflective practice' is used to document CPD in a 'stamp-collecting' fashion, where a certain minimum number of documented and structured 'reflections' plus included primary references (journal articles) constitute the required minimum portfolio to questionably 'prove' continuing professional development or competence to practice. The author has observed this 'stamp-collecting' approach (plus the practice of collecting attendance certificates from CPD events) at several institutions in the UK though the reasons behind such practice is unclear: it may be that clinical facilitators and educators are themselves unsure about what 'reflective practice' and a 'reflective practitioner' are, or it may be that practitioners tacitly agree to this form of CPD documentation because they believe it offers the path of least resistance (in an already busy day) to document CPD events or prove continuing competence to practice. Additionally, the use of diaries or journals[1] to record reflection is considered by some to be time-consuming and repetitive and the diaries themselves to be of predominantly superficial descriptive content, leading to boredom and frustration for those using them.[9,11]

REFLECTIVE PRACTICE: RECENT INTERPRETATIONS AND DEFINITIONS

Johns[12] interprets reflective practice 'as the ability to access, make sense of, and learn through work experience to achieve more desirable, effective and satisfying work'. This definition provides little justification for elevating a system of cognition to the central status it appears to occupy in nursing.[9,10,12,13] Johns and Graham[14] further state that 'Reflection turns the practitioners into an awareness of the human encounter and should free the senses rather than constrain them'. How this transformation may occur is unclear.[10] Whilst sounding uplifting (and far from the mundane), concepts such as these have serious limitations in that there is absolutely no definition of the states aspired to (i.e. awareness of the human encounter) and no clear framework for achieving them (i.e. free the senses and not constrain them).

Despite a paucity of rigorous empirical investigation[10,15,16] into reflective practice, reflective practice has become focal in nursing education.[8,10,12,13,17,18] Articles appearing in the reflective practice literature range from investigations of the context and benefits of reflective practice[1,5,10,13,19,20,21] to articles that appear trivial and anecdotal when purporting to document a model

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of staged reflective practice.[14,22] Heath[18] proposed that benefits arising from reflective practice are unlikely to be large and measurable, though noting anecdotally and paradoxically that individual practitioners may sometimes make large steps forward with even a single reflection.

As therapy radiographers belong to such a strongly empirically-based profession, it would seem a backward step to introduce a 'reflective practice' system that could not be critically examined and empirically demonstrated to benefit the profession and ultimately lead to improved patient outcomes. Others disagree with this view[15,23] proposing that reflective practice 'does not, and indeed should not, lend itself to enquiry of a rationalistic form'.

BACK TO BASICS: WHAT REALLY IS 'REFLECTIVE PRACTICE'?

There seems to be some continuing confusion between the terms 'reflective practice', 'reflection' and the 'reflective practitioner'. Perhaps an examination of the roots of reflective practice models would help radiographers define what 'reflective practice' actually is.

Knowing-in-action

Donald A. Schön is considered by many[2,12,13,20,21] as a primary source for reflective practice. Schön[5] rejected technical rationality, or the view that practitioners are instrumental problem solvers who select technical means best suited to particular purposes[23] as a means to knowledge, and instead proposed that:

> *'when we go about the spontaneous, intuitive performance of the actions of everyday life, we show ourselves to be knowledgeable in a special way. Often we cannot say what it is that we know. Our knowing is ordinarily tacit, implicit in our patterns of action and in our feel for the stuff with which we are dealing. It seems right to say that our knowing is in our action.'*

Schön went on to say that 'the workday life of the professional depends on tacit knowing-in-action' and proposed that:

> *'The practitioner... in his day-to-day practice... makes innumerable judgements of quality for which he cannot state adequate criteria, and... displays skills for which he cannot state the rules and procedures. Even when he makes conscious use of research-based theories and techniques, he is dependent on tacit recognition, judgements, and skilful performances.'*

The professional therefore responds to situations by employing tacit understanding or knowing-in action that has evolved from practice. Within the radiographic profession it is easy to assume that specialist knowledge is held conjointly amongst all radiographers, but as research gathers pace and there are stronger demands for empirical justification for techniques and procedures, it appears that specialised radiographers are emerging with specific areas of radiation therapy expertise and knowledge. Perhaps reflecting on knowledge in action can help these practitioners articulate and transmit some of this knowledge.

Reflection-in-action

Schön then noted that practitioners might think about what they are doing as they are doing it. He termed this process reflection-in-action and noted that

> *'[the] entire process of reflection in action... is central to the 'art' by which practitioners sometimes deal well with situations of uncertainty, instability, uniqueness, and value conflict'.*

Schön also proposed that surprise could initiate *reflection-in-action.*[5,24] Sometimes the practitioner may arrive at a new theory by articulating a feeling about a 'divergent' practice situation. Reflection in action necessarily involves experiment, and the most fundamental experimental option in practice is to question 'What if?' This type of experimentation arising from reflecting in action is familiar to practical radiographers.

Reflecting-on-action

Radiographers can also later *reflect on* past reflection-in-action, or knowing-in-action.[24] This may indirectly shape future action. *Reflecting-on-action* is the concept that later authors develop when considering reflective practice models[10,13,17,18,19] but it is worthwhile emphasising that Schön[5,24] himself did not define what 'reflective practice' was,[10] and instead used an interview to draw out an individual practitioner's knowing-in action. However, discursive later evaluation of any action or cognition is hardly a new concept for any professional. Clarke et al.[13] make distinctions between deliberative

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reflection (using high order processes of reflection such as planning, preparing, analysing, synthesising predicting and evaluating) and deep reflection (to be able to ask fundamental questions about the underpinnings of practice: 'Why?' and 'What makes me?'). Although perhaps useful for radiographers examining the process of cognitive reflection, this is again different from Schön's reflection-in-action, and the reflective practitioner. Indeed, Schön made no attempt to distinguish levels or stages of reflection, though later authors introducing systematised reflective practice have attempted to do so.[8, 14, 19]

Reflection, reflective practice and the reflective practitioner

Thus, three different concepts still remain. The first is that of Schön's reflective practitioner. The second is that of a structured model of reflection which does not necessarily arise spontaneously from the concept of the reflective practitioner and is indeed at odds with the spontaneity of the reflective practitioner who reflects in action.

The last concept is that of reflection itself, which therapy radiographers as individuals inherently do to verify and examine their clinical actions, and take stock of their day with a view to improving decisions, throughput, or professional interactions. Indeed, the author observes from peer comments that there is probably a wide natural range of methods of cognitive reflection throughout the international radiation therapy community as a whole. The individual's style of reflection may depend on initial education, extensive clinical experience, work practices, planning and treatment delivery protocols and decision making processes from simulation, through planning, to treatment delivery. To ascertain the range of diversity of cognitive reflection already present within the profession would require a descriptive large scale study and may be worthwhile before educators or clinical CPD facilitators become prescriptive about the way in which reflection could or should be structured or documented for the profession.

Whilst many issues surrounding patient care, professional interactions and management are common to both radiation therapy and other health professions, a high proportion of decisions made by clinical therapy radiographers working in simulation, planning or treatment delivery are concerned with repeated objective critical evaluation of large numbers of measurable component parameters as indicators of the accuracy of a highly complex clinical event, with correction as required. It is perhaps pertinent to note that the outcome of all day-to-day clinical decisions (adjusting a breast set-up, planning a prostate etc.) and all verification of treatment parameters are immediately peer-reviewed and objectively verified before treatment is delivered, or a plan accepted for treatment. This intense, repeated reflection and peer review may be unique to radiation therapy.

Until now, therapy radiographers have not necessarily documented professional reflections. Do therapy radiographers now need a system or model to direct reflection so that it is meaningful and relevant to them, and is there a defined and agreed framework for its implementation?

WORDS OF CAUTION REGARDING REFLECTIVE PRACTICE

Debate continues into the value of reflective practice as a system.[18] Reflective practice remains problematic, it is difficult to conceptualise,[13] it appears to have no clear or universal definition[10] and no certain framework or guidelines for its implementation.[10] In *reflecting on* action there may be strong hindsight bias:[20] such bias influences peoples' recollection of events once they know the final outcome ('being wise after the event'). This calls into question the validity of reflection as a way to enhance practice.

Reflective practice in nursing is viewed as a means to overcome the perceived long-standing disjuncture between nursing theory and practice.[14,19,25] This disjuncture has not been reported in similar terms in the radiographic literature. Even within nursing reflective practice literature, there is no consensus that reflective practice is of demonstrable proven value: on the contrary, some authors conclude that it is of unproven value.[9,10] Pilot, phase 1 & 2, thence larger scale empirical studies of reflective practice outcomes and benefits are non-existent; the reflective practice literature reports only small (by radiation therapy trial standards) numbers of reflective practice participants who present predominantly anecdotal and subjective evidence. Published evidence of reflective practice's impact on clinical nursing practice appears based on personal anecdote[10,14,26,27]

which is qualitative and descriptive. Indications of attempts to mechanise reflective practice and to endow perceived reflective practice skills with an elitism have become evident in nursing.[28]

Clarke et al.,[13] commenting on reflective practice, even (surprisingly) proposed that 'the gendered nature of nursing where women outnumber men, is likely to make it a more reflective profession' because precursors to reflection such as the dominance of the life-strategy of communion, characterised by openness, willingness to share and a readiness to accept new ideas, are more associated with women. In the absence of defined structure, reflection on critical incidence occurrence is considered to be unsuited and psychologically destabilising for students.[16]

Some practitioners are unclear about the difference between 'reflection' and 'reflective practice',[9] although the standards by which they are judged also appears unclear. For all of the above reasons, it is therefore questionable whether a strategy such as 'reflective practice', as confused and ill defined as it is[10] could or should be used by therapy radiographers as the cornerstone for continuing life long learning. Perhaps therapy radiographers should define acceptable frameworks for their professional reflection.

MODELS TO DOCUMENT PROFESSIONAL REFLECTION

Various models to direct reflection have been developed. Gibbs' reflective cycle,[8] for example, is a reflective framework which links reflection with learning and permits documentation of the reflective process. Other reflective cycles[29,30] may offer more scope for reflecting on an issue to hand. The choice of one cycle over another appears a matter of personal preference and the perceived 'meshing' of the reflective cycle to specific issues.

Staged reflective practice models can be applied to issues associated with role extension and career development, to state a problem, raise a query, or initiate research. Nevertheless, descriptions of events can be initially biased, and later hindsight bias when reflecting (being wise after the event) may invalidate such reflection.[20] Additionally, conclusions reached using any reflective cycle may

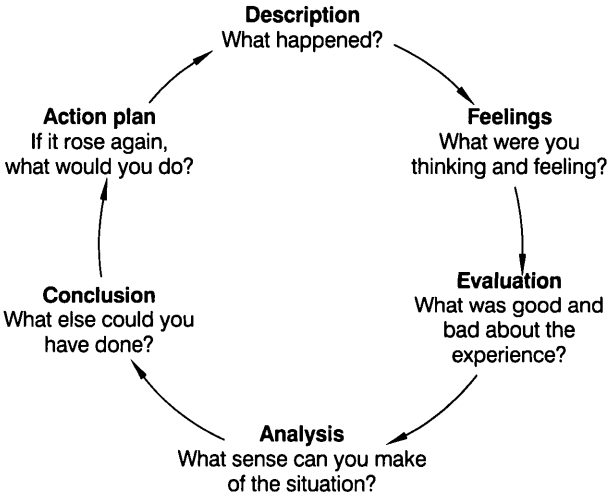

Figure 1. Gibbs' reflective cycle (Hull 1996 p 90)

be co-dependent on events and interactions not identified sufficiently in the reflective process, which may invalidate the conclusions reached.

Although particular models of structured reflection may lead to adequate documentation for specific purposes (CPD, work based learning) this author observes from initial peer comments that some therapy radiographers feel that reflective practice models used by themselves so far[8,29,30] constrain the way in which they can reflect. Indeed, a therapy radiographer's previous natural processes of reflection may have to be radically adjusted to fit into a particular reflective practice framework. Whether this is helpful of merely becomes an additional chore for the therapy radiographer concerned remains to be studied, analysed and debated in the literature. A descriptive large-scale study into initial therapy radiographer experience with 'reflective practice' models would be useful to determine how they feel about using chosen models and to document any perceived benefits/disadvantages of reflective practice models. It appears all too easy for didactic proponents of 'reflective practice' to impose reflective practice models on therapy radiographers as a prescription for critical reflection without having to justify the rationale or the goal of such documented reflection. Based on initial experience and studies, educators, clinical CPD facilitators and clinical therapy radiographers may prefer to:

1. Redefine or re-organise existing systematised reflective practice models.

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2. Define new models to document reflection to suit radiographer's clinical needs
3. Alternatively, incorporate more of the educational theories categorised as technical rationality by Schön[31] into models to document reflection.

Eventually, such models for reflecting on practice might be tools used by therapy radiographers to make tacit knowledge tangible, and may eventually become useful in defining the rationale behind clinical decision making.

CONCLUSION AND RECOMMENDATIONS

This author makes a clear distinction between reflection (as occurs naturally to therapy radiographers) and 'reflective practice' as a system. 'Reflective practice' as a system may be inherently flawed and therapy radiographers should first define exactly what 'reflective practice' is, and then define a framework for its implementation before using any variant of structured 'reflective practice' as a cornerstone for life long learning for therapy radiographers.

This author sees several areas that need further addressing and discussion within the radiation therapy community:

1. A large-scale initial descriptive study might be warranted to ascertain and document the range of diversity of cognitive reflection that already occurs within the radiation therapy community before educators or clinical CPD facilitators become prescriptive about the way in which reflection could, or should be structured, or documented within the profession.
2. A descriptive medium-scale study into initial therapy radiographer experience with present structured 'reflective practice' models would be useful to determine how they feel about using chosen 'reflective practice' models and to document any perceived benefits/disadvantages of such reflective practice models to the therapy radiographers concerned.
3. Initial pilot studies with sufficient recruited numbers of therapy radiographers would be useful to document the actual benefit/detriment of reflective practice as a means to enhance personal practice and improve patient outcomes.

Until such studies are forthcoming, it may be hard to persuade the radiation therapy community that structured 'reflective practice' offers any demonstrable benefit over continuing to reflect as radiographers do now. Therapy radiographers already appear to reflect on practice in a way meaningful to them and which, with some thought about framework, might lead to appropriate documentary evidence of CPD. There is no compelling evidence yet that any systematised 'reflective practice' is inherently more beneficial to therapy radiographers then these radiographers continuing to reflect as they do now, with or without documentation.

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