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The College of Radiographers' Education and Career Framework (fourth edition): Exploring the guideline implementation gap across England using Normalisation Process Theory

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ABSTRACT

Introduction: In 2022, the College of Radiographers (CoR) published the fourth edition of their Education and Career Framework (ECF). This essential document provides a professional blueprint for the radiography career trajectory with the overarching aim of improving patient outcomes. However, publication does not guarantee adoption. To access the full benefits of the ECF, its implementation requires a strategic approach.

Methods: To advance our understanding of the translational gap between policy and practice, this observational mixed-methods study employed Normalisation Process Theory (NPT) as a theoretical frame. Focusing on the diagnostic radiography profession in England, a national consultation survey was deployed, together with four consultation workshops. The quantitative survey data was analysed using descriptive and inferential statistics. Meanwhile, the framework approach was adapted for the qualitative analysis.

Results: The data collection took place between April–June 2023. In total, 142 survey responses were returned. Each workshop was comprised of 7–11 participants. The findings were deductively interpreted through the lens of NPT, from which five core themes emerged: making sense of complexity (coherence); bringing people together (cognitive participation); being strategic (collective action); evaluating complexity (reflexive monitoring); implementation in the 'real world' (barriers and enablers).

Conclusion: By furthering our understanding of how the workforce has received and utilised the ECF, the gaps in its implementation were identified. This led to the development of recommendations to address the implementation gaps and enhance the ECF's adoption. The recommendations were study-derived, linked to responsible stakeholders, and grouped into four strategic priorities, aligned with the NPT domains.

Implications for practice: By enacting these evidence-based recommendations, we can enhance the ECF's translation from printed page to real-world outcomes, for the benefit of the profession, service delivery, and service users.

Introduction

Diagnostic radiography is a rapidly evolving profession; emerging government policy, practice developments, technological advances, and shifting population health needs are key drivers for change, bringing with them significant challenges and opportunities.[1,2] Radiographers seek to improve patient outcomes and service delivery models through role development and extended

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scopes of practice, a notion reinforced in the NHS Long Term Workforce Plan.[1,3] However, with new and emerging roles comes the expectation that knowledge and capability keep pace with the increasing responsibility and complexity found at each level of practice.[4] Education and training, which provide safety through sound theoretical underpinning, are therefore at the heart of this issue.[2,5]

For this reason, the publication of the fourth edition of the College of Radiographers' (CoR) Education and Career Framework (ECF) in November 2022 was both timely and necessary (Fig. 1). The ECF offers guidance for the education and career development of the radiography profession[1]:

> *'The ECF defines the various levels of radiography practice and the educational standards related to each of them. The framework informs the CoR's pre- and post-registration programme approval process. It also informs the accreditation of individual members of the radiography workforce through the CoR accreditation schemes.'* (p.7)

The framework is intended for all members of the radiography workforce, including those in operational and strategic leadership roles, those in education and training, and those in research. It is also intended as a promotional and informational resource for current learners, those considering a career in radiography, members of the public, and wider stakeholders. Ultimately, the ECF's overarching aim is to support improved outcomes for patients through the education, training, and professional development of the workforce.[1]

Generally, guidelines have the capacity to reduce inappropriate variation, facilitate the translation of evidence into practice, and enhance quality and safety.[6,7] Despite these benefits, there is often a dissonance between policy intent and policy in-action. Policy documents do not necessarily lead to practice change or yield desirable impacts; many remain, to a lesser or greater extent, unknown and unused.[8] During the policy life cycle, often the greatest attention is given to policy formation, with lesser attention paid to the process of implementation. This is somewhat paradoxical, as the implementation phase is widely considered the most important, as it is during this phase that policy goals and expectations are transformed into outcomes.[9,10]

Furthermore, the implementation phase is often the most complicated.[9] In part, this is attributable to the complex real-world contexts into which policies and guidelines are routinely deposited, where policies often resemble 'wicked problems', characterised by their complex, uncertain, and diverging properties.[10,11] As such, it has been recognised that more needs to be done to ensure guidance and policy are implemented as intended.[10]

The ECF is an essential asset for futureproofing the profession. However, it is not enough to assume that, simply because a policy is 'on the books', it has been implemented in practice as intended or designed; a more strategic approach is required.[7,12] This study, the first of its kind, was therefore aimed at understanding the extent of the guideline implementation gap by investigating the mismatch (if any) between the ECF's stated goals and the present reality of its implementation.[13] Equipped with this knowledge, its subsequent aim was to propose mediating pathways to shape and improve the implementation process.[14]

Figure 1. ECF QR code.[1]

Methods

Context and scope

This implementation study formed part of a Clinical Education Improvement Fellowship opportunity, supported by NHS England (South East) Workforce, Training, and Education, Canterbury Christ Church University, and the Florence Nightingale Foundation. Given the finite time and resource associated with this opportunity, the decision was made to concentrate on the diagnostic radiography profession in England, with a particular focus on the South East region.

Steering group

A steering group (SG) was established shortly after the study's inception, chaired by the principal author. Its members included professional body representatives alongside a broad selection of individuals across the diagnostic radiography profession, as well as a service user, aligning with the inclusive and patient-centred vision of the ECF. Primarily, its purpose was to represent the voices of those whom the ECF was intended to influence. On a secondary basis, the SG was also responsible for advising on the project direction, providing feedback, troubleshooting, and utilising their networks for engagement and dissemination purposes.

Study design

An observational mixed-methods design was employed to explore the translational gap between the policy and practice domains from a whole-system perspective.[14] The study was informed by normalisation process theory (NPT), which focuses on the work of individuals and collectives to normalise a complex intervention, embedding the practice into routine operations. NPT is composed of four core constructs (Fig. 2), which interact dynamically with one another and the wider context of the intervention[13–15]:

- Coherence.
- Cognitive participation.
- Collective action.
- Reflexive monitoring.

An online consultation survey was adapted from the normalisation measure development (NoMAD) instrument. Based on NPT,

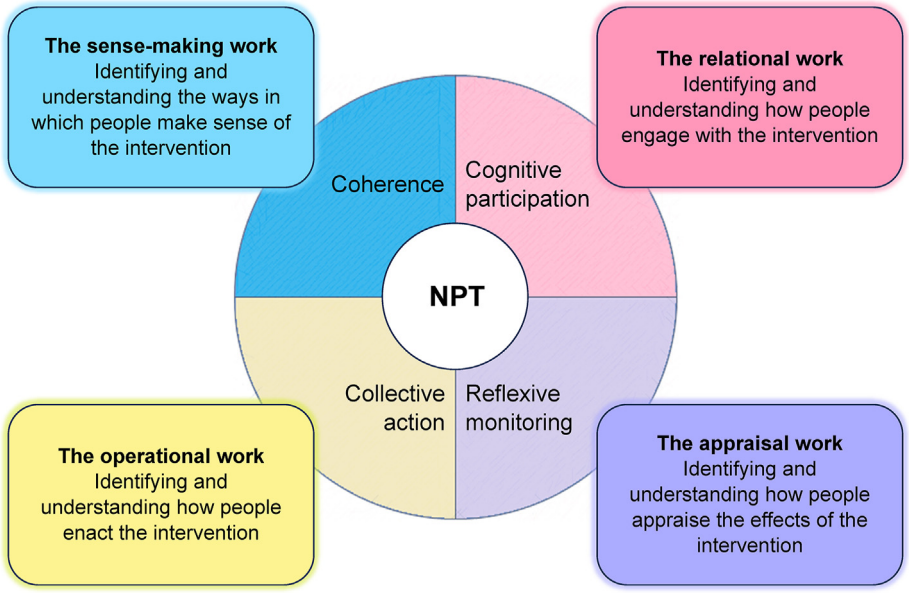

Figure 2. The four core constructs of NPT.[13–15]

this validated questionnaire tool was designed to assess the factors likely to affect normalisation from the perspective of the implementation participants.[16,17] In cooperation with the SG, the instrument was minimally modified to align principally with the investigation topic. Consultation workshops were employed to gather qualitative data. Their main purpose was to explore the survey findings, consistent with an interactive approach. Topic guides were developed, with input from the SG, to facilitate a semi-structured strategy.[18] These were informed by NPT principles and, where applicable, the survey findings.

Data collection and analysis

The consultation survey was disseminated using a convenience sampling method, targeting the diagnostic radiography population across England. Also encouraged to complete the survey were unregistered individuals, such as learners and support workers, and wider stakeholders with influence over diagnostic radiography policy direction. In total, 142 responses were returned over the four-week survey period. Four consultation workshops were conducted over the course of the study: of these, three were based in the South East, while one was held at the UK Imaging & Oncology (UKIO) Congress 2023. The group sizes varied between 7 and 11 people.[19,20] To maximise accessibility, the workshops were divided into online and in-person sessions. Again, sampling was purposively broad, as a wide range of views and perspectives were required. The British Educational Research Association (BERA) Ethical Guidelines for Educational Research were observed.[21]

The data collection took place between April–June 2023. The study was promoted through numerous social media platforms, including Twitter (now known as 'X'), FutureNHS, and various podcasts. Details of the study were circulated in the Society and College of Radiographers' (SCoR) email newsletter. It was also publicised at the UKIO 2023 SCoR exhibition stand. The consultation survey was administered via Microsoft Forms, so the data was saved in a secure account. Downloaded data was stored in a restricted OneDrive folder. No personally identifiable information was collected. For the quantitative analysis of the survey data, descriptive and inferential statistics were used to explore patterns, draw comparisons, and ascertain relationships. The Statistical Package for Social Sciences (SPSS version 20) was employed for this purpose.

The consultation workshops were moderated by the principal author. As well as topic guides, delegate information sheets and contracting statements were developed, with input from the SG, to support the workshops. To maintain confidentiality, recordings from the workshops were transcribed and anonymised. The transcripts were stored in a restricted OneDrive folder. Once the accuracy of the transcripts was confirmed, the recordings were deleted. The framework approach was adapted for the qualitative data analysis, deductively inserting NPT as a pre-existing theoretical frame.[22] The qualitative analysis was conducted by the principal author and reviewed by the project supervisor (co-author: CRB).

Results and discussion

The demographics of the survey participants varied; most identified as advanced practitioners (26.8 %), followed by service managers/leaders (17.6 %), practitioners (14.1 %), academics/researchers (9.9 %), and enhanced practitioners (9.9 %). Geographically, all seven regions of England were represented. The survey captured the respondents' lack of familiarity with the ECF's contents: an average rating of 5.3/10 was returned (1 = not at all familiar; 10 = completely familiar). It also captured the gap between current working practices and the ECF's recommendations, alongside a range of barriers and enablers. Though the survey findings were ample, the overarching goal of the study was to propose recommendations to enhance the implementation of the ECF. The recommendations were developed from the qualitative data; as such, this report focuses primarily on the consultation workshop findings.

Coherence: making sense of complexity

Within NPT, coherence describes the process and work, as carried out by individuals and collectives, to understand and attribute

meaning to a practice or, in the case of this study, a professional policy intervention.[13–15] Throughout the study, the concepts of sense-making and complexity were intertwined. Healthcare is considered a complex adaptive system, due to its high levels of connectivity and interdependence, competing and changing demands, uncertainty, unpredictability, myriad relationships, and its perpetual state of emergence.[23] Within this system sits the profession and practice of diagnostic radiography, which too can be seen as complex; the constant flux of interrelating parts (including actors, actions, and contexts) makes it difficult to fully grasp, navigate, and change.

Within this context lies the ECF and its emergent role in bringing order to complexity, as illuminated in this study. To accommodate the evolving healthcare landscape, there are now many routes into and through the diagnostic radiography profession, itself an umbrella term which encompasses many different roles. The ECF, as a collated, structured, interactive resource, allows radiographers to make sense of this complexity.

> *'It's a nice repository of information about who should be doing what at each level, what modifications they require, and how you can advance people to the top of their boundary.'* (CW2-8-RCL/INCL)

However, this remains an inchoate concept that requires further work to fulfil its potential. Across the study, there was a pervading view that, both within the radiography workforce and further afield, awareness of the ECF was broadly lacking.

> *'I haven't used this before, but I can now see that perhaps I ought to investigate further … '* (CW2-7-EL)

Indeed, when asked if staff in their organisation shared an understanding of the ECF's purpose, the most frequently returned response from the survey participants was 'disagree' at 31.2 % (Fig. 3). Awareness and understanding were, therefore, characterised as key implementation determinants, but more is needed to secure success: participants must also have confidence in the ECF's value, relevance, and application.

> *'It's getting people to understand the document, but also to understand the value of it. I think that's a big thing that's lacking in certain areas.'* (UKIO-1-LRR/RCF)

To fulfil the implementation of the ECF, participants suggested a range of ancillary measures. Often these were centred on the power of human connections and storytelling to improve awareness, understanding, and engagement, a concept revisited in the theme of cognitive participation. Notably, the real-world stories contained within the ECF, articulated through the medium of case studies, resonated with participants.

> *' … having people that have used [the ECF] say, "Well, I used it in this way", would be useful … like the case studies about, "This is how I got here", you could also have, "This is how I used the document to move forwards."'* (UKIO-4-NSL/ROM)

Participants stressed the importance of the ECF aligning with other professional frameworks and standards. This perception is somewhat contrary to NPT, which suggests that differentiation is key to sense-making; to accept an intervention, stakeholders must see it as being new and distinct.[13–15] There is perhaps room to expand this definition. Alignment was viewed as a cornerstone of professional status, ensuring radiographers were appropriately benchmarked and recognised as such.

> *'I don't think alignment's a problem within the profession. I think it's other people outside the profession seeing that alignment and understanding that alignment, especially at that ACP [Advanced Clinical Practice] level … the ECF could help us to educate others what advanced practice looks like in radiography, and how this equates to other professions … '* (UKIO-3-RR/RCF)

Concurrently, the ECF is a profession-specific framework, which grants a degree of distinction and confers many complementary benefits.

> *'I think it does align with, and adds to, the 'Multi-professional framework for advanced clinical practice [in England]', which is*

Figure 3. Shared understanding of the ECF's purpose.

obviously a generic document. I think taking this to a more profession-specific level makes it more accessible to radiographers.' (UKIO-7-LRR)

By contextualising wider policy for the radiography profession, the ECF improves accessibility and, by extension, the likelihood of policy adoption. In a crowded landscape of professional development frameworks, the ECF narrows the gap between radiographers and key policy drivers and imperatives, enabling the former to navigate and derive meaning from the latter.

In brief, the ECF is beginning to bring order to the complexity of radiography practice in its current policy context. Its capacity to achieve this is thus derived: it acts as an integrated information repository; it mirrors the priorities of equivalent policy documents by emphasising contemporary concepts (such as the four pillars of practice), ensuring inter-policy resonance; its design enhances the delivery of contemporary concepts, using a person-centred approach to connect with its audience; and it offers radiography-specific contextualisation, improving accessibility. However, further support is required if the ECF is to fulfil its implementation potential, especially when one considers the crowded landscape in which it resides.

Cognitive participation: bringing people together

This construct describes the process and work, as carried out by individuals and collectives, to build commitment and engagement around an intervention.[13–15] Central to cognitive participation is the concept of the ECF as a boundary object. By definition, a boundary object fulfils a bridging function between intersecting practices and people.[24–26] The ECF is a potential focal point around which different corners of the profession, along with wider stakeholders, can unite and work together to future-proof the diagnostic radiography workforce.

However, to function as a boundary object, the ECF must engage stakeholders at all levels within the system. The data suggests this is not yet the case, with notable heterogeneity across stakeholder groups. As Fig. 4 illustrates, the education sector exhibited the greatest familiarity with the ECF; meanwhile, as a collective, individuals using the ECF for their personal professional development were least familiar with its contents.

As with the coherence theme, the concept of relevance was a significant factor: participants were far more likely to engage with the ECF if it connected with them on a personal professional basis. Therefore, to function as a boundary object, there must be resonance between the ECF and its stakeholders.

'It's a few tenacious individuals who are currently driving this … I don't think we've got that united front yet … So, I think dissemination and education is needed.' (UKIO-3-RR/RCF)

If the practice and profession of diagnostic radiography is a complex system, it may be useful to frame the ECF as a system intervention. A systems thinking approach emphasises the 'whole' and considers the dynamic properties inherent in complex systems. This involves, amongst other strategies, working across multiple levels and utilising effective leverage points. Given the dynamic interplay between system levels (including macro-, exo-, meso-, and microlevels), introducing change at strategic points, with a view to moving the designated system toward a desired goal, is likely to have synergistic effects.[27–29]

This was borne out in the study data, as participants described individuals and organisations with exceptional influence over the system's functionality, including managers (in particular, service managers), practice educators, pre-registration learners, Higher Education Institutions (HEIs), and SCoR.

'Practice educators are the way forward for this because they're the ones facilitating opportunities for radiographers to fulfil the career framework … ' (CW3-8-RR/RSL)

'My thoughts are, it starts with the students … when they then come into practice and talk to their mentors and the other radiographers, then it starts to change the culture and everybody's more aware of it. So, to put it back to the universities, I think it

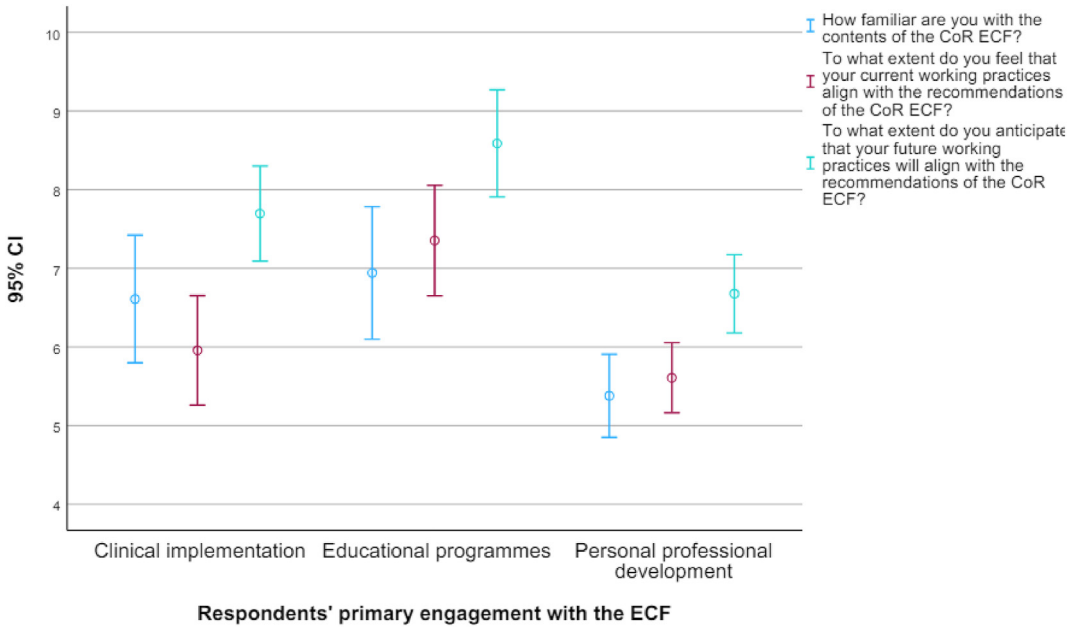

Figure 4. Familiarity and alignment with the ECF vs. the context in which participants primarily interact with the ECF.

should start at day one … if we can engage the students right from the beginning, then it filters up.' (CW3-2-SR/PE)

Of these influential agents, the participants ascribed a special responsibility to SCoR, as the originator of the ECF. From a systems perspective, this may pose a challenge: as a national professional body, initiating implementation work at key leverage points within the system layers (for example, regional, network, system, and organisational) may be difficult. If the implementation lacks cohesion, different parties are likely to pull in different directions, increasing the risk of unintended consequences. Ergo, a systems thinking approach to implementation may be beneficial, in which key stakeholders at key levels of the system are strategically targeted.

In considering the whole system, this approach ought to address the relational barriers. One barrier is communication fatigue, a concept which overlaps with the coherence theme: the ECF sits within a crowded policy landscape, so it is a struggle to capture people's attention.

'I think it needs selling to the service managers, because they are so busy and so under pressure, their email inboxes are full every day. I think it needs selling to them as to why it's useful, why it's important. And like I was saying, the value. I think unless it's made a priority for them, to make their lives easier, then it's not going to hit the top of the priority list.' (UKIO-3-RR/RCF)

Additionally, implementation efforts should be mindful of the human factors into which they are being introduced, especially in a post-pandemic age.

'We've come through three years of a pandemic. Everyone's very, very tired. People are either burnt out or teetering on the edge of it. So, it is hard to engage people. We've done our best to recover our services, but we've not done anything much to recover our people … So, at the minute, I think [the ECF] is for the few, it's not for the many.' (UKIO-7-LRR)

Lastly, the ECF is effectively a 'one-stop shop' resource, the positive aspects of which were highlighted in the coherence theme. However, as a byproduct of this characterisation, the ECF is a lengthy and potentially daunting document, which may deter readers. As such, further work is needed to make it easier for stakeholders to come together, engage, and interact with the ECF, acknowledging and responding to the context into which the framework has landed.

Collective action: being strategic

This construct describes the process and work, as carried out by individuals and collectives, to enact the intervention and make it function in practice.[13–15] Across the study, the participants described the myriad ways in which they operationalised the ECF, along with their hopes and intentions for future implementation. These could be broadly grouped into three categories: using the ECF personally, using the ECF for integrated workforce planning, and using the ECF politically.

By virtue of its design and content, the ECF sets out a direction of travel and provides a map for career development: these qualities naturally lend themselves to personal professional utilisation.

'I'm aiming towards a consultant role, and it gave me the guidelines I needed to take to my management and say, "This is what I'm working towards, this is what I'm mapping against, these are the gaps."' (UKIO-3-RR/RCF)

Furthermore, the ECF offers an integrated approach to workforce planning by catering to its different facets: strategic, operational, and educational. The ECF therefore has the capacity to guide and synergise decision-making within and across boundaries, so the right people, with the right training, can be in the right place, at the right time to meet service needs.

'The biggest consideration in my role would be workforce planning. So, our strategy for the next five years, what the workforce is likely to look like against the framework … what the gaps are and developing new posts according to the framework.' (UKIO-5-RSM)

'What [the ECF] enabled us to do was look at the end product, the practitioner, and ask, "What from our curriculum maps against the requirements or expectations of somebody who is a practitioner?"' (CW3-5-SL/PL)

These two categories (personal professional utilisation and integrated workforce planning) could be said to encompass the instrumental and conceptual aspects of policy utilisation: applying the policy recommendations in specific, direct ways and using the policy for general enlightenment.

Additionally, the ECF lends credence and weight to professional standpoints, so it can be used politically to support and inform strategic directives. This falls within the purview of symbolic utilisation, in which policy is used to legitimate and sustain a predetermined position.[30,31]

'It's very much influencing discussions that are taking place at strategic level … we were waiting for [the ECF] to come out to inform the [Health Education England] funding opportunities.' (UKIO-2-RSL/RCF)

Woven through the collective action theme was the concept of being strategic: from individual career planning to integrated workforce planning and political manoeuvring, the supports diagnostic radiographers to think and act strategically. Currently, much of this activity is aspirational; additional support is required to realise the potential of the ECF.

Reflexive monitoring: evaluating complexity

This construct describes the process and work, as carried out by individuals and collectives, to appraise the intervention and reflect on its effects.[13–15] Given the relatively early stages of its adoption, it is premature to evaluate the impacts of the ECF. Nonetheless, at an individual level, evaluation is likely to be focused on the non-altruistic effects on career development. Organisationally, demonstrating impact on service delivery and patient care was prioritised by the participants.

'[One challenge is] evidencing the benefits of [the ECF] … what is the benefit to the person, or to the patient, or to the service?' (CW2-6-RSM)

However, appraising the ECF and its effects poses a significant challenge. Given the complex interplay of intended impacts and the turbulent context from which they arise, cause and effect cannot be reliably established. As such, participants expressed uncertainty as to what should be measured and how.

'What are we measuring as successful? Is it getting more people into radiography? Is it getting more people at specific levels? Is it a happier workforce? I think we need to understand how we define the success of the ECF before we can figure out how we measure it … it's a hard one to assess, because there are so many other factors outside of the ECF.' (UKIO-2-RSL/RCF)

Indeed, when asked if they had the means to evaluate the impacts of the ECF, at 35.3 %, the most frequently returned response from the survey participants was 'neither agree nor disagree', illustrating the depth of uncertainty (Fig. 5). Ergo, as the implementation progresses, this issue may benefit from further study to ascertain acceptable evaluation strategies for the future. Ideally, these strategies should be linked to the drivers for implementation.

'Surely it goes back to when people wrote either this document or the original, what their aims and objectives were, that's how you measure [success] … Why did they write it? What was the need? Has that been fulfilled?' (UKIO-3-RR/RCF)

Implementation in the 'real world': barriers and enablers

'The ECF does not appear to have considered the real-world or workforce impacts.' (CS-1-AP)

Across the four core NPT themes, participants described a plethora of implementation determinants. Issues such as time, funding, operational pressures, staffing levels, skill mix,

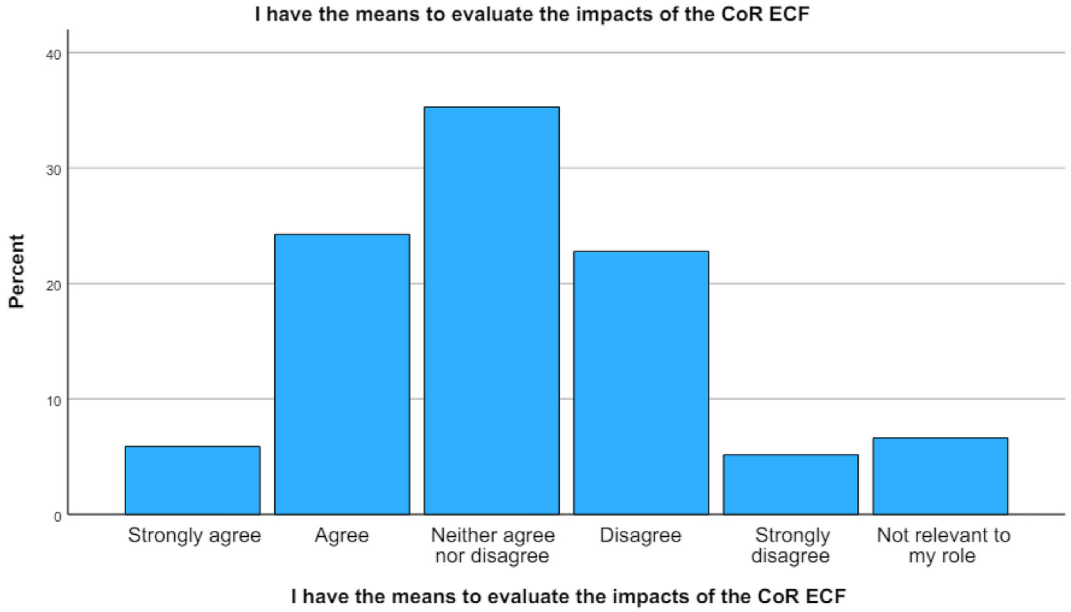

Figure 5. Evaluating the impacts of the ECF.

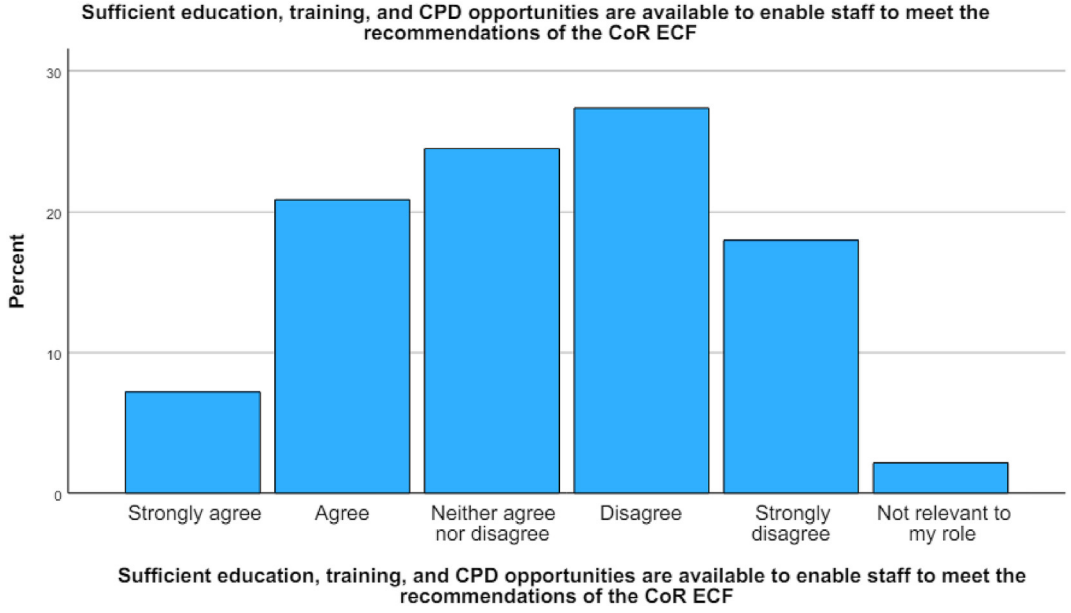

Figure 6. Availability of education, training, and CPD opportunities to support the ECF's implementation.

professional culture, and access to appropriate education were consistently raised (Figs. 6–9). There exists a tension between service requirements and individual aspirations. In many cases, these priorities were viewed as conflicting and difficult to reconcile.

> *'[It's potentially] raising expectations of staff that we're unable to meet, because of the difference between what the service needs and what somebody might want for their own professional growth.'* (CW2-1-EL/RSL)

The potential to create a disparate workforce was a source of concern for participants, who were unsure how to navigate the change in people practice.

> *'You're going to have a discrepancy between those currently in post versus the newer workforce as they come in … For example, comparing our consultant posts against the new framework, they're not quite where they should be. How do you then get the people that have been doing it for so many years up to that level?'* (UKIO-5-RSM)

While the ECF was broadly perceived as an inclusive document, concerns were raised over the potentially exclusionary nature of the educational recommendations.

> *'There will be a fair proportion of the workforce you exclude from this, because they don't like the academic environment for*

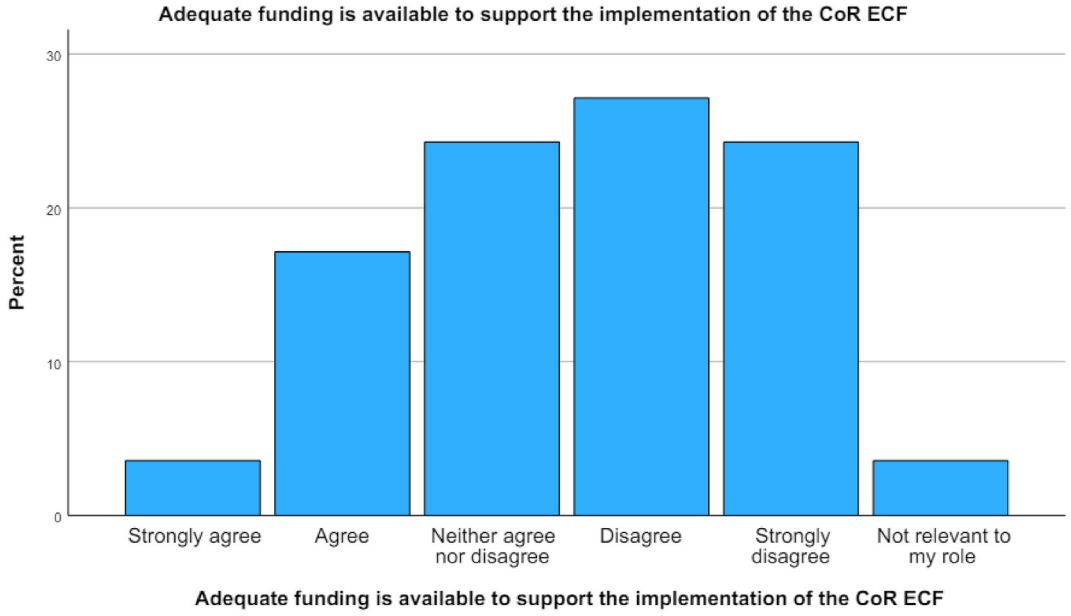

Figure 7. Availability of adequate funding to support the ECF's implementation.

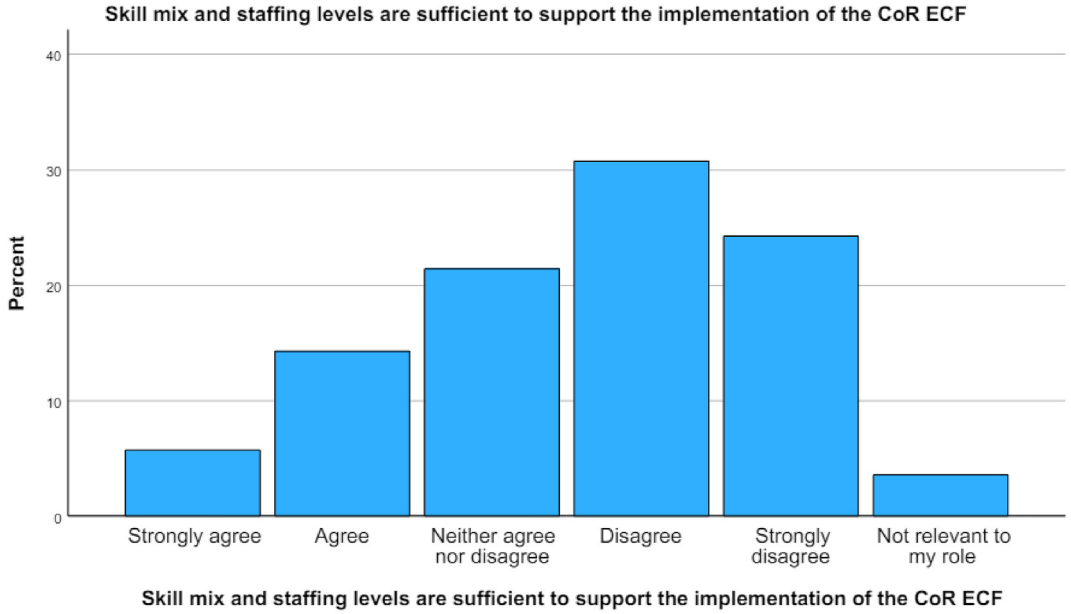

Figure 8. Adequacy of skill mix and staffing levels to support the ECF's implementation.

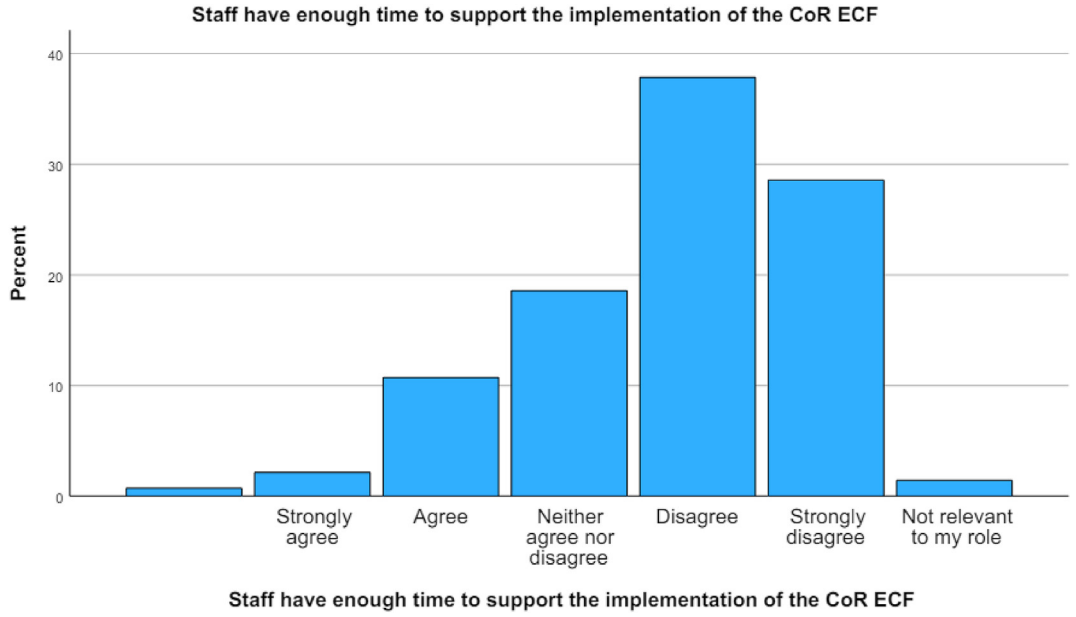

Figure 9. Adequacy of time to support the ECF's implementation.

whatever reason it might be … So, there are real risks of creating a disparate workforce.' (CW2-8-RCL/INCL)

Future implementation endeavours should, therefore, be considerate of these challenges and seek to influence those which may be receptive to modification.

Limitations

Of course, the study was not without its limitations. Firstly, therapeutic radiography was not included. Though many overlapping issues exist between diagnostic and therapeutic radiography, the two professions are wholly distinct. The latter's exclusion inhibits the applicability of the study's findings. Similarly, the study's geographic confinement to England (in particular, the South East region) impairs its relevance to the other three nations (Scotland, Wales, and Northern Ireland), which operate differently on several fronts. Furthermore, the study's participants were self-selecting. It is therefore possible that those with the strongest views (positive or negative) were most compelled to take part, thus impacting the generalisability of the results. Finally, the response rate for the consultation survey was relatively low, potentially inhibiting its validity and reliability. Going forward, future research and implementation efforts should be cognisant of these limitations.

Conclusion

Ultimately, the aim of the study was to propose recommendations to enhance the implementation of the ECF. The recommendations were driven by the qualitative data (that is, developed inductively from the participants' responses) and grouped into four strategic priorities, aligned with the NPT tenets. These were refined in consultation with the SG; the members reviewed the proposed recommendations and were asked to:

- Rank the recommendations in priority order, considering factors such a feasibility and potential impacts.
- Suggest responsible person(s) and/or organisation(s) for each recommendation.
- Suggest an implementation timeframe for each recommendation.

The responses were synthesised and collectively agreed by the SG. The final recommendations are detailed in Supplementary Tables 1–4.

In conclusion, the fourth edition of the ECF is an essential resource. In mapping out the education and career pathways for the radiography profession, it empowers the workforce to meet the current and future healthcare needs of the population. This study highlights the heterogeneity of opinion and adoption surrounding the ECF. It is important to observe the positive news stories: the ECF is, by many, held in high regard, and the education sector is making promising strides with its adoption. Nevertheless, progress amongst clinical teams and individuals is less assured; in the absence of an evidence-based implementation strategy, many of the ECF's recommendations will languish as untapped aspirations, instead of real-world deliverables.

This study, the first of its kind, aimed to address this need and, in so doing, narrows the translational gap between policy intent and policy in-practice. It therefore represents an important step forward, but considerable work remains to enact the study recommendations. Affirmative steps have already been taken, with the commencement of various NHS England-funded, SCoR-commissioned projects in 2024–25. These will see the ECF further embedded across all levels and roles, as detailed in the framework. Several of these projects, their focus and direction of travel, have been informed by this study.[32]

Beyond this, it is hoped the study recommendations will engender further projects across the four strategic priorities, thus ensuring wraparound coverage of the ECF's implementation needs. Were the authors to spotlight a single topic of interest, it would be defining the success of the ECF: what does success look like and how do we measure it? To reference one poignant reflection from the study, as captured in the reflexive monitoring theme, we must first define success before we can seek to achieve it.

Ethics statement

The consultation survey was approved by the Canterbury Christ Church University Faculty of Medicine, Health, and Social Care

Ethics Panel (ETH2223-0262). The enhancement consultations did not meet the threshold criterion to require additional ethical scrutiny, as determined by the Health Research Authority (HRA). Regarding data collection, storage, interpretation, and disposal, ethical principles were adhered to in accordance with the British Educational Research Association (BERA) Ethical Guidelines for Educational Research, with governance oversight from the steering group.

Conflict of interest statement

Kathryn E. Williamson and Dr Amy Robertson are employed by the Society and College of Radiographers, the publisher of the Education and Career Framework on which this implementation study is centred. Neither was directly involved in the data collection or analysis.

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Appendix A. Supplementary materials

Supplementary materials to this article can be found online at https://doi.org/10.1016/j.radi.2025.102931.

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