Factors influencing radiography lecturers' perceptions and understanding of reflective practice in a newly implemented curriculum

H Thomas, MPhil, HPE; **M Volschenk,** MPhil, HPE

Centre for Health Professions Education, Faculty of Medicine and Health Sciences, Stellenbosch University, Cape Town, South Africa

Corresponding author: *H Thomas (thomashe@cput.ac.za)*

Background. Reflective practice has become an integral component of the new Bachelor of Science (BSc) radiography programme in South Africa (SA). As a result, lecturers on the programme are required to facilitate reflective learning, and are assumed to be skilled in this. However, relevant literature indicates that health professions educators may not necessarily possess the requisite competence or experience in facilitating reflective learning. Moreover, there is a paucity in the literature on lecturers' perceptions and understanding of reflective practice in the context of undergraduate radiography curricula, particularly in sub-Saharan Africa.

Objective. To gain insight into BSc radiography lecturers' perceptions and understanding of reflective practice at a selected university of technology in SA.

Methods. This was a qualitative exploratory study in which individual semi-structured interviews were conducted with lecturers teaching on the new BSc Radiography programme. The purposively selected sample consisted of 11 participants. Interviews were audio-recorded, transcribed and thematically analysed.

Results. Analysis of the data revealed three themes, namely diverse understandings of reflective practice among lecturers, factors influencing optimal facilitation of reflective learning and strategies to improve reflective practice.

Conclusion. The findings of this study indicated that lecturers felt unprepared to facilitate reflective practice in the new BSc radiography curriculum. The need for faculty development initiatives, such as an introduction to reflective tools and educational strategies to support lecturers in facilitating reflective practice, was highlighted. Furthermore, it was found that if objectives were clearly outlined and facilitator guides available, a desired reflective practice could be established.

Afr J Health Professions Educ 2021;13(1):47-51. https://doi.org/10.7196/AJHPE.2021. v13i1.1249

The last decade has seen a growing emphasis on reflective practice as a graduate outcome of health professions education (HPE) programmes across the globe.[1-4] Reflective practice for professionals was popularised by Schön,[5] who introduced the concepts of reflection in action and reflection on action in the late 1980s. Reflection in action refers to a reflective process during an activity, which helps a person to modify their approach, if needed, to achieve desired results. Reflection on action is aimed at revisiting and reflecting on a particular experience with a view to learning how to improve and grow from the experience. Critical reflection is therefore regarded as an essential component of ongoing personal and professional learning, as it supports both students and professionals in critically analysing and directing their progression toward learning outcomes and required practice standards. [6]

When the first Bachelor of Science (BSc) radiography programme in South Africa (SA) commenced in 2014, it incorporated a focus on reflective practice as a graduate outcome that was not apparent in the former qualification, the National Diploma in Radiography.[7] Both the Health Professions Council of SA and the SA Qualifications Authority require that students develop reflective practice as a graduate attribute in the new programme.[7] However, no guidelines or competency framework is provided. As a result, lecturers on this programme are required to facilitate new forms of learning, which may prove challenging in some instances.

Although it is often assumed that lecturers themselves are reflective practitioners, and thus skilled in integrating reflective practice into learning and teaching, many lecturers may not possess the necessary experience or skills in practising and teaching in this manner.[8,9] This is a critical aspect to consider, as lecturers' experience of reflective practice may impact significantly on learners' experiences and the subsequent development of their reflective skills.[9]

From the literature, it is evident that in order to engage appropriately with reflective practice, educators need to develop a comprehensive understanding of the concept, its underpinning assumptions and, similarly, its value.[4,8,10] However, studies that have explored the understanding and level of training of those who facilitated the learning of reflective skills report that between 23% and 55% had received no training, and required support to develop this higher-order cognitive skill.[3,8] Moreover, in a study that explored registered nurses' experiences of mentoring undergraduate nursing students in a rural context, participants indicated that their own limited knowledge of reflective practice posed a barrier to facilitating the development of reflective learning skills in their students.[9] Coulson and Harvey[11] found that facilitators of reflective practice may first need to develop their own reflective capacity before being able to teach the practice to their students. The authors propose a scaffolding framework aimed at supporting the progressive development of reflective capacity in both teachers and students. Scaffolding goals include learning to reflect, and practising reflection for action, reflection in action and reflection on action in various contexts.[11]

Although well established internationally,[2,4] the concepts of reflection and reflective practice have received little attention in radiography education in the sub-Saharan African context. Available literature focuses on the use of reflective tools for radiography students in which their reflective writing skills are assessed through guided reflective writing.[2] There is, however, a paucity in the literature on radiography lecturers' engagement with reflective practice, and their perceptions and understanding thereof in the context of undergraduate radiography education. This study aimed to explore radiography lecturers' perceptions and understanding of reflective practice in the context of the new BSc radiography programme at a selected university of technology in SA, with a view to inform future curriculum design and faculty development initiatives.

Methods

Research design

In this study, an exploratory descriptive design was used to explore and develop a meaningful interpretation of how lecturers' perceptions and understanding of reflective practice influenced its facilitation in their specific teaching context.[12]

Study participants

The study population consisted of 14 lecturers teaching on the radiography programme. Lecturers who taught on both the clinical and academic curriculum of the new BSc radiography programme were eligible to participate in the study. A study sample of 11 participants (N=11) was purposively selected. Two lecturers did not respond to the invitation to participate, while another only taught on the academic curriculum, and was therefore excluded from the study. The 11 eligible lecturers who responded to the invitation were all selected, given the diverse qualities they would bring to the study. This allowed the researchers to explore whether aspects such as years of teaching experience, being a junior v. a senior lecturer and having a Master's degree v. a BTech qualification had any influence on participants' perceptions and understanding of reflective practice in the context of the new BSc radiography curriculum.

Data generation

Qualitative data were generated by means of semi-structured, individual, face-to-face interviews, which were conducted by the principal investigator. This approach allowed for considerable flexibility in scope and depth, enabling the researchers to gain a deep, holistic understanding of the participants' viewpoints within their settings.[12] The interview schedule was guided by the study objectives and informed by the literature on previous studies that explored the perceptions and understanding of educators facilitating reflective practice in the health professions context. Interview questions explored participants' own experiences with, and understanding of, reflective practice, as well as their experiences with implementing reflective practice in the new BSc radiography curriculum. Interviews were audio-recorded with the written consent of participants, and transcribed verbatim by an independent transcriber.

Data analysis

Data were thematically analysed using Braun and Clarke's[13] six phases of thematic analysis, which include familiarising oneself with the data, generating initial codes, searching for themes, reviewing themes, refining and naming themes and producing a report. The transcripts were initially read and re-read by the principal investigator in order to familiarise herself with the data and identify initial codes. After initial coding, common meanings were recognised, and themes were identified. Codes and themes were reviewed and refined in collaboration with the co-investigators. The themes were developed inductively.

Quality assurance

Shenton's[14] strategies for ensuring trustworthiness in qualitative research were followed, to ensure rigour. The quality criteria that were addressed included credibility, transferability, dependability and confirmability.[14] A step-by-step approach to the data analysis process, the researcher's reflective notes and appendices are available to demonstrate transparency. Additionally, the transcriptions were returned to participants for member checking in order to ensure that a shared meaning of the data was obtained.[12] Since the principal investigator was part of the teaching team on the new BSc radiography programme, and conducted all interviews, it was essential to remain cognisant of her own preconceptions and biases, as well as the potential influence she might have on data generation and analysis. Reflexivity was enhanced through keeping a research journal and maintaining open dialogue and discussion with the co-investigators during data generation and analysis.

Ethical considerations

Ethical approval was obtained from the Stellenbosch University Health research ethics committee (ref. no. S17/03/063) as well as from the research ethics committee of Cape Peninsula University of Technology (ref. no. 2017/H19). Participation in the study was voluntary, and informed consent was obtained from each participant prior to interview commencement. Anonymity was ensured by assigning a unique number to participants. Data were stored on a password-protected computer.

Results

The qualitative data analysis provided valuable insight into lecturers' perceptions and understanding of reflective practice in the context of the new BSc radiography curriculum. Three themes, namely diverse understandings of reflective practice among lecturers, factors influencing optimal facilitation of reflective learning and strategies to improve reflective practice, were identified.

All participants were lecturers at the selected university of technology, and were involved in a faculty development programme or held a formal qualification in teaching in higher education.

The data and interpretative comments were organised into three overarching themes, as follows.

Theme 1: Diverse understandings of reflective practice among lecturers

Lecturers' responses revealed diverse understandings of the concept of reflective practice. This influenced their personal engagement with it.

Some of the junior lecturers indicated that they were exposed to reflective practice during their own training, either as radiographers or lecturers. As a result, their engagement with reflective practice seemed to have an outward focus on issues relating to student interaction and learning, as well as the identification of problem areas in learning:

> 'After having given the class, I would think about the student participation, whether or not I was happy with that and if I felt the student participation was what I expected.' (participant 1)

'Once you've done with your teaching, you think to yourself, have they understood what you've done and the evidence is when they do an assignment.' (participant 3)

The more senior lecturers, on the other hand, reported that they had little prior exposure to reflective practice in their own training. During engagement with reflective practice, they seemed to adopt an inward focus, assessing their own teaching methods and analysing their teaching practices:

'What I've done was it good or bad and how can I improve it?' (participant 7)

One lecturer indicated that (s)he did not understand the concept of reflective practice:

'I don't really understand reflective practice … I can just maybe think that it is reflecting on stuff that you know or things that you have learnt.' (participant 6)

Theme 2: Factors influencing optimal facilitation of reflective learning

This theme highlighted lecturers' perceptions of factors that may influence the facilitation of reflective learning in students.

One lecturer considered self-exploration with reflective practice as a key enabler to the effective facilitation of reflective learning in students:

'I don't think I would have been so comfortable to teach it to students or to invite students on this journey if I didn't read about it and if I didn't try it out.' (participant 2)

Poor student engagement with reflective learning was viewed by many participants as a negative influence on the effective implementation of reflective practice in the new curriculum:

'They [students] are not used to that kind of learning. It's not something that they get introduced to early on, and by the time they get to fourth year, they're like … we got by without this new learning method.' (participant 1)

Large groups posed a significant challenge to the optimal facilitation of reflective practice:

'The other challenge … the numbers … when you are dealing with a large number of students it becomes a little bit challenging.' (participant 8)

Furthermore, lecturers expressed frustration with the limited time allocated for the facilitation of reflective learning in the curriculum:

'I think time is the biggest obstacle because on the timetable you get sessions with the students and you have that as contact time to deliver content.' (participant 2)

In addition, the fact that reflective practice was not overtly taught and assessed in the new curriculum was viewed by many lecturers as a hindrance to the facilitation of reflective practice:

'Reflection needs to be made explicit … it must find a place in whether it's a learner guide … whether it's a lesson plan that we give to the students, it must be mentioned by name.' (participant 2)

'If there is nothing attached to it, a mark or a requirement then some of them are just doing it for the sake of completing it.' (participant 10)

Theme 3: Strategies to improve reflective practice

This theme emphasises lecturers' need to be introduced to reflective tools and to be supported with the integration of reflective practice in the new curriculum.

A few lecturers alluded to the need for clear guidelines on the implementation of reflective practice in the new curriculum:

'As a department, we must decide sort of a policy on reflective practice or reflection.' (participant 9)

Lecturers reported that they found it challenging to familiarise themselves with the disciplinary content of the new curriculum while simultaneously having to learn how to facilitate the development of reflective skills:

'First of all okay, in a new setting, you have to try and get a grasp of what needs to be in the curriculum first, and this is a new programme. So I think we are still trying to grasp content at the moment.' (participant 4)

Although the majority of lecturers were mindful of reflective tools, several acknowledged that they would benefit from further exploration of such tools in order to better support students:

'I think there is a need for a programme to be in place for us to make us aware of reflective practice because you want them [students] also prepared for life-long learning and how to implement [that] within our teaching' (participant 3)

'First of all I think faculty can assist in maybe running workshops on reflective practice.' (participant 10)

Discussion

To the authors' knowledge, this is the first study to be conducted in the SA context since reflective practice was introduced as an exit-level outcome of the new BSc radiography qualification. The study highlighted a number of factors that may impact on the successful integration of reflective practice in the new curriculum.

Participant responses indicated that most lecturers found it challenging to conceptualise reflection within the context of radiography. This may have a direct impact on student learning and the extent to which reflective practice is embedded in students' understanding. Difficulty in conceptualising reflective practice appears to be a universal problem,[8,9] which resonates well with this study's findings and suggests the need for a conceptual framework in which the grounding of beliefs, understanding, values and consequences for reflective practice[15] within the radiography context is clearly defined. The development of such a framework may, in turn, lead to a more structured and unified understanding of reflective practice.

Responses revealed a link between lecturers' personal reflective approaches and the ways in which they facilitated reflective learning. Those who regularly engaged in reflection and embarked on self-exploration into reflective tools were generally more mindful of engaging students in structured reflective approaches. The majority of experienced lecturers were unfamiliar with the use of structured reflective tools, and infrequently incorporated these into teaching and learning activities. This could be explained by the fact that most junior lecturers were exposed to reflective practice during either their radiography or postgraduate studies, while senior lecturers did not receive the same exposure during any of their studies.

Our findings suggest that the facilitation of reflective learning calls for personal exploration and commitment on the part of the lecturer, especially since reflective practice is often considered a complex concept.

Indeed, Race[10] emphasises the need for lecturers to be skilled in reflective practice in order to effectively facilitate the reflective learning process. The introduction of Coulson and Harvey's[11] scaffolded framework into the radiography education context could add value, as it makes provision for the scaffolding of both lecturers' and students' reflective competence in workplace-based curricula. Lecturers could greatly benefit from the opportunity to identify their own proximal zone of reflective development as a starting point in developing a more critical reflective approach to teaching and learning.[11] This is important because the outcomes of the reflective learner may be critically influenced by the lecturer's reflective competence.

Participant responses revealed diverse understandings of the concept of reflective practice as it relates to the new curriculum. The finding that reflective practice was not overtly taught and assessed in the curriculum highlights the need for clear and detailed curriculum guidelines on its facilitation. A study by Braine[8] correspondingly identified the issue that reflection was not made explicit in the curriculum and, as such, appeared to be disconnected from learning. Frank *et al.*[16] propose a clearly defined curriculum purpose, with measurable outcomes, to avoid possible misperceptions in educational programmes. Without clear objectives, facilitator guides and detailed teaching and assessment strategies, it may prove challenging to facilitate the desired type of learning. Furthermore, the finding that students were less likely to engage with reflective practice if marks were not allocated for such learning activities not only speaks to the fact that assessment drives learning, but also emphasises the importance of constructive alignment between learning outcomes, teaching and learning activities and assessment.[17]

The context in which learning takes place has a major impact on learning outcomes. Some lecturers felt that radiography, as a profession, lends itself naturally to reflection owing to the large component of work-integrated learning in the curriculum. However, they were confronted with overwhelming contextual challenges when facilitating reflective learning, including large classes and poor student engagement. They concluded that additional time should be allocated for reflective learning to promote optimal student engagement. Others felt that reflective learning was too time-consuming, and that learners needed convincing to engage with this kind of learning. These challenges are consistent with those found in the literature,[17] and the lecturers in the present study voiced the need to be introduced to strategies that will allow them to nurture reflective learning in large groups, and to manage time more efficiently.

As a result of research and educator development programmes, lecturers were cognisant of tools that encourage reflection. Interestingly, the more junior lecturers were most comfortable using reflective tools, as they had been exposed to them during their radiography training or other postgraduate studies. The data, however, shed little insight into the way lecturers use these tools. Structured questionnaires and portfolios in the final year of study were the only clear facilitative methods that could be identified from the data. Findlay *et al.*[2] advocate structured reflection as an effective method to encourage reflection in radiography. However, structured questionnaires could potentially be restrictive in nature for those who want to reflect critically. Lecturers, therefore, need to further explore tools that encourage critical reflection.

Participants further emphasised the need for faculty to participate in, and collaborate on, strategies that support the integration of reflection with discipline-specific content. Although most lecturers agreed that reflection was an integrated part of workplace learning, most of them found it challenging to integrate the theory and practice of reflection in the workplace. Braine's[8] findings echoed this, in that facilitators required guidance in innovative approaches to incorporating reflection into learning. Participants unanimously concluded that guidance, or the lack thereof, ultimately holds implications for the teaching and assessment of reflective practice. It became clear that a need for faculty development existed within the context of the new curriculum.

Study limitations

A limitation of the study is that it only considers the view of the radiography lecturers at a single institution. Students' reflective competence, as embedded via the new curriculum, was not addressed. However, the findings of the study provided insight into how reflective practice was interpreted and facilitated by lecturers in the new curriculum, which could assist other institutions that are also in the process of re-curriculation.

Conclusion

This study has highlighted the need for faculty development initiatives in which lecturers are introduced to reflective tools and educational strategies to support the facilitation of reflective practice in the new BSc radiography curriculum at a selected university of technology. Clearly outlined objectives and facilitator guides could establish a desired reflective practice culture. Furthermore, lecturers demonstrated varied understanding of reflective practice within radiography, which points to the need for a shared understanding of the concept. The successful facilitation of reflective practice was furthermore influenced by many barriers, which may ultimately impact on the successful attainment of graduate outcomes. There is a need for further research to determine the extent to which graduates of this programme have developed reflective competence.

Declaration. HT conducted the study in partial fulfilment of a Master's degree in Health Professions Education from Stellenbosch University.

Acknowledgements. This work would not have been possible without the participation of the radiography lecturers at the study site, and the authors gratefully acknowledge their valuable contributions. We would also like to thank the management at the study site for their support and permission to conduct the study. We gratefully acknowledge Dr Lakshini McNamee's contribution as co-investigator. We also extend our thanks to Mrs I Meyer for her contribution towards the final editing of the manuscript.

Author contributions. HT conducted the study in partial fulfilment of a Master's degree in Health Professions Education from Stellenbosch University. She collected and analysed the data and subsequently prepared the manuscript. MV acted as primary research supervisor, assisted with verifying the data analysis, and commented and contributed to various sections of the manuscript. Both authors reviewed and approved the final article.

Funding. None.

Conflicts of interest. None.

1. Sandars J. The use of reflection in medical education: AMEE Guide No. 44. Med Teach 2009;31(8):685-695. https://doi.org/10.1080/01421590903050374
2. Findlay N, Dempsey SE, Warren-Forward HM. Development and validation of reflective inventories: Assisting radiation therapists with reflective practice. J Radiother Pract 2011;10(1):3-12. https://doi.org/10.1017/S1460396910000142
3. Ward A, Gracey J. Reflective practice in physiotherapy curricula: A survey of UK university-based professional practice coordinators. Med Teach 2006;28(1):e32-39. https://doi.org/10.1080/01421590600568512

4. Brackenridge SA. Perceptions of reflective practice among recent Australian radiation therapy graduates. Radiogr 2007;54(2):18-23. https://doi.org/10.1002/j.2051-3909.2007.tb00068.x
5. Schön DA. Educating the Reflective Practitioner: Toward a New Design for Teaching and Learning in the Professions. San Francisco: Jossey-Bass, 1987.
6. Black PE, Plowright D. A multi-dimensional model of reflective learning for professional development. ReflectPract 2010;11(2):245-258. https://doi.org/10.1080/14623941003665810
7. South African Qualifications Authority. Registered Qualification: Bachelors of Radiography. Pretoria: SAQA, 2013. http://regqs.saqa.org.za/viewQualification.php?id=66949 (accessed 15 August 2019).
8. Braine ME. Exploring new nurse teachers' perception and understanding of reflection : An exploratory study. Nurse Educ Pract 2009;9(4):262-270. https://doi.org/10.1016/j.nepr.2008.08.008
9. Atkins S, Williams A. Registered nurses' experiences of mentoring undergraduate nursing students. J Adv Nurs 1995;21:1006-1015. https://doi.org/10.1046/j.1365-2648.1995.21051006.x
10. Race P. Evidencing reflection: Putting the 'w' into reflection. ESCalate, 2006. http://escalate.ac.uk/resources/reflection/03.html (accessed 15 August 2019).
11. Coulson D, Harvey M. Scaffolding student reflection for experience-based learning: A framework. Teaching Higher Educ 2013;18(4):401-413. https://doi.org/10.1080/13562517.2012.752726
12. Maree K. First Steps in Research. Pretoria: Van Schaik, 2007.
13. Braun V, Clarke V. Using thematic analysis in psychology. Qual Res Psychol 2006;3(2):77-101. https://doi.org/10.1191/1478088706qp063oa
14. Shenton AK. Strategies for ensuring trustworthiness in qualitative research projects. Educ Inf 2004;22(2):63-75.
15. Barrie, SC. A conceptual framework for the teaching and learning of generic graduate attributes. Studies Higher Educ 2007;32(4):439-458. https://doi.org/10.1080/03075070701476100
16. Frank JR, Mungroo R, Ahmad Y, et al. Toward a definition of competency-based education in medicine: A systematic review of published definitions. Med Teach 2010;32:631-637. https://doi.org/10.3109/0142159X.2010.500898
17. Biggs JB. Teaching for Quality Learning at University: What the Student Does. London: McGraw-Hill Education (UK), 2011.
18. Mann K, Gordon J, Macleod A. Reflection and reflective practice in health professions education: A systematic review. Adv Heal Sci Educ 2009;14(4):595-621. https://doi.org/10.1007/s10459-007-9090-2

Accepted 24 April 2020.