# Improving Teaching and Learning of Ethics and Human Rights in the Radiography Undergraduate Programme with the HECAF Model

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## Abstract

Education for healthcare professionals, including radiography, is focused on cognitive, affective and psychomotor learning. The aim of this article is to present and argue for the consideration of the HECAF model, which is designed to improve the teaching and learning of Ethics and Human Rights in the radiography undergraduate programme. This model was developed as a result of a qualitative study using action research as a research design. There were two phases, namely situation analysis and appreciative inquiry. The study used multiple data collection tools. Quantitative data was collected during phase one and qualitative data was collected in phase two. Content analysis was appropriate because it could be used for both quantitative and qualitative data. Participants were facilitators of learning, third-year radiography students and clinical supervisors from the eight higher education institutions that offer radiography education and training in South Africa. Ethical approval was granted. The HECAF model is presented as a strategy that can improve the teaching and learning of Ethics and Human Rights in the undergraduate radiography programme. HECAF is as an acronym for humanness, environment, core curriculum, assessment and feedback. It is argued in this article that the HECAF model can contribute to enhancing professional conduct and ethical behaviour in the clinical radiography environment.

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# Introduction

The integration of ethics and human rights in the radiography undergraduate programme was mandated by the Health Professions Council of South Africa (HPCSA) in 2008. The HPCSA was concerned with the conduct and behaviour of healthcare professionals in the clinical environment. The education of radiographers in South Africa and other parts of the world is mostly undertaken in a multifaceted fashion. England et al. (2017, S8) describe a multifaceted way of teaching as one that includes both academic and clinical components. With this strategy of teaching there is a need to integrate what is learnt in theory into the clinical environment. Ohangwu et al. (2016) raise concerns that what is happening in the clinical environment might be negatively impacting the education of radiographers. One concern voiced by these authors relates to the cooperation of other professionals in the education of radiographers (2016, 2). Based on the words of the students as reported by Ohangwu et al. (2016, 12), there is a disconnect between the basic sciences taught in class and what they are exposed to in the clinical environment. Clinical supervision is regarded as important for the education of radiographers, not only for their clinical skills, but also for the safety of the patients (England et al. 2017, S12). The education and training of radiographers in the academic and clinical environment is meant to assist students in integrating theory into practice, which means there should not be a disconnect. The teaching and learning of ethics and human rights in the undergraduate programme for radiographers and other healthcare professionals was introduced with the aim of enhancing professional practice and ethical behaviour in the clinical environment. Concerns such as the disconnect reported in the study by England et al. (2017) led to this study, which aimed at defining and refining a teaching and learning strategy to improve the teaching and learning of ethics and human rights. The study culminated in the design of the HECAF model, which has humanness, environment, core curriculum, assessment and feedback as its main elements. It is argued in this article that taking these five elements into consideration could improve the teaching and learning of ethics and human rights in the radiography undergraduate programme and ultimately enhance professional conduct and ethical behaviour in the clinical environment.

Experiential learning is the overarching theory that guides the programme. Kolb (2015, xviii) describes experiential learning as a theoretical perspective on the individual learning process that applies to all situations and arenas of life. According to the experiential learning theory, ideas are freed and reformed through experience. It is for this reason that radiographers are educated in a work-integrated learning (WIL) environment which is based on experiential learning theory. With regards to the education of radiographers in South Africa, reference is first made to Ruscheniko (2003), who has highlighted the need for educators to consider the development of critical thinking skills when educating radiography students. Ruscheniko (2003, 12) argued that the radiography students need critical thinking skills to establish interpersonal relations, professional conduct and ethical behaviour. Another study by Du Plessis (2015) looked at work-integrated learning and the need to have a clear

alignment between the objectives, facilitation methods and assessment (2016, 3). It is evident that attempts have always been made to improve teaching and learning in radiography in South Africa even though the focus has not been specifically on ethics and human rights.

## Integrating Ethics and Human Rights in the Curriculum for Undergraduate Healthcare Professionals

The need to transform teaching and learning in the radiography undergraduate programme can be related to similar calls that are made for healthcare professionals in general. To begin with, Ssebunnya (2013) looked at the curriculum for medical students and noticed the competition that seemed to be present in terms of the subjects that the students undertook. This author highlighted the importance of having ethics incorporated into the curriculum but was concerned with the time allocated for the subject. The other subjects that were regarded as competing with ethics education were research and technological development (2013, 48). Ssebunnya also mentioned that, despite the fact that medical ethics had been introduced in the 1980s, there was no specific reference to human rights. The Lancet report of 2010 prepared by Frenk et al. alluded to the need to improve the performance of health systems by adapting core professional competencies to specific contexts (2010, 8). The need for evolution in the education of healthcare professionals with a focus on medical ethics is further supported by Samarakoon et al. (2013, 1). They argue that the teaching and learning of medical ethics must move from a didactic subject-based format to problem-based, interactive and student-centred learning. Mitra and Saha (2016, 95) add that for the healthcare professional to practice or serve patients well, they must be able to use both the "head, hands and their hearts."

In relation to the radiography educational programme, reference is made here to the three practice standards that have been developed by the American Society of Radiologic Technologists (ASRT) which include desirable and achievable levels of performance (Ehrlich and Coakes 2013, 61). The three practice or competency standards are clinical, technical and professional. These are related to the classification by Mitra and Saha (2016, 95) as follows: clinical activities are related to the hands, technical activities are connected to the mind, and finally, professional activities concern the heart. Taking the discussion further and focusing on professional practice or competency, and as demonstrated in the introductory section, it is important that ethics and human rights be included in the curriculum for radiographers and other healthcare professionals. Professional activities or professional behaviour is described by Ehrlich and Coakes (2013, 59) as the highest value that a professional person places on the service provided to others and the community. McInerney and Lees (2018) support the call for ethics education among healthcare professionals by emphasising that this contributes to equipping healthcare professionals with the skills needed to adhere to the ethical standards of their practice (2018, 13). These authors also state that equipping radiography professionals, or any other professionals, cannot be achieved through

traditional lectures, simulations or just clinical placements. It is based on views such as this that this study was conducted. Another point that provided a strong impetus for this study was that the need to which McInerney and Lees alluded—to equip professionals so that they can adhere to ethical standards (2018, 12)—was very evident in the clinical environment observed by the researchers. These researchers' concerns were also echoed by some literature as discussed in the next section.

## Professional Challenges Experienced by Radiographers in the Clinical Environment

A number of studies refer to professional challenges that face radiographers in the clinical environment. These challenges are presented here to clarify the problem that led to this study. As stated in the introduction, the HPCSA issued a mandate in 2008 to have the subject Ethics and Human Rights integrated in the undergraduate programme of the healthcare professionals registered under its ambit. It is therefore to be expected that the conduct and behaviour of radiographers in the clinical environment would reflect evidence of this learning. Yet the contrary was observed by the researchers, as there seemed to be uncertainties on issues of consent forms, radiation protection and respecting the rights of patients. These challenges are reported in the literature of different parts of the world as well as in South African literature. Lewis et al. (2008) conducted a study on Australian radiographers' level of professional autonomy combined with the influence of medical dominance and radiographers' ethical commitment. It was concluded in this study that Australian radiographers, while attempting to set a standard of ethical commitment, were hindered by difficulties of medical dominance, relatively poor professional autonomy and difficulty in accepting responsibility (2008, 90). Yielder and Davis argue that the medical profession has always maintained control over other healthcare professions, including diagnostic radiography (2009, 347), and this can be seen as a reason why some radiographers claim to be confused in as far as their professional responsibilities are concerned. These challenges can further be related to the editorial opinion presented by Etheredge (2011) who describes radiographers in South Africa as not having clearly defined responsibilities in the chain of treatment. This author presents this situation as having brought confusion to some radiography professionals (2011, 10). In addition to this opinion, Strudwich and Day (2014, 238) demonstrated that there are good interpersonal relations in the clinical environment; for example, radiographers can be found discussing the request for the medical x-ray examinations with the referring clinicians. This can further be related to recognition of the role of the radiographer as an expert when it comes to imaging (Naylor and Foulkes 2018, 9). These authors, however, acknowledge that power imbalances among professionals tend to impact on communication, which is so essential in the healthcare environment. McInerney and Lees (2018, 13) emphasise the need to educate radiographers to be critically reflective so that they can challenge pre-existing suppositions. This, however, does not seem to be evident in the clinical radiography environment, hence the need for the HECAF model for teaching and learning ethics and human rights.

## Ethics and Human Rights Education for Radiographers

Ethics in healthcare is defined as a study of morality, and it involves a careful reflection on and analysis of actions and behaviour (Dhai, McQuoid-Mason, and Van Bogaert 2011, 3). Deigh (2010, 1) presents ethics as one of the main branches of philosophy that springs from a simple question: "What makes honest actions right and dishonest ones wrong?" What struck us as researchers was that human rights were not emphasised in the literature, especially as one reviews prescribed literature for the radiography undergraduate programmes. This observation was evident despite the fact that the textbooks included references to the Bill of Rights or to the Patients' Rights Charter. Relating to the field of philosophy, there are theories on ethics that guide the way in which healthcare professionals make decisions. The theories include utilitarianism, deontology, virtue ethics, principlism, applied ethics as well as Ubuntu. The first five theories on ethics as listed here can easily be related to the role and responsibilities of the radiographer, especially where reference is made to radiation protection. The researchers could, however, not find reference to the Ubuntu philosophy in the radiography literature. Ubuntu is described by Nzimakwe (2014, 30) as an old African term for humanness, for caring and for sharing. According to Mangena (2016, 69), a person is born espousing Ubuntu. This author defines Ubuntu as the essential feature of African ethics. In relating Ubuntu to theories like utilitarianism, deontology and principlism, Mangena (2016, 77) describes Ubuntu as being relational, dialogical, consensual, spiritual, horizontal and vertical. The relational aspect of Ubuntu relates well to teaching and learning theories like socio-constructivism, experiential, transformative as well as authentic learning. These theories emphasise the need for a conducive teaching and learning environment, which cannot be limited to physical structures only, but includes human interactions as well. This can further be related to the findings in the study by McInerney and Lees (2018, 19) in which the participating students recommended that to overcome the challenge of integrating ethics and human rights in the clinical environment, teaching and learning must be expanded to incorporate learning with other professionals. Reverting to the study upon which this article is based, the research question, aim and objectives as well as the methodology are presented briefly to help demonstrate how the HECAF model was derived at and developed.

## Research Question, Research Aim and Objectives

How can the teaching and learning of ethics and human rights be improved in both design and implementation to enhance the skills and competency that radiographers need to conduct themselves professionally and demonstrate ethical behaviour in the clinical environment? The aim of this study was to determine how teaching and learning the subject Ethics and Human Rights in the radiography undergraduate programme could be improved in order to enhance transformation in terms of professional conduct and ethical behaviour in the radiography clinical environment.

The three objectives were as follows:

1. To evaluate the current teaching and learning of Ethics and Human Rights in the radiography undergraduate programme in South Africa by conducting a situation analysis in order to understand the source of the gap between teaching and learning and actual practice.

2. To identify ways in which teaching and learning the subject of Ethics and Human Rights in the radiography undergraduate programme can be improved.

3. To develop and refine a teaching and learning strategy or model for Ethics and Human Rights to be implemented in both the theoretical and clinical radiography environments.

## Research Methodology

The qualitative study used an action research design that incorporated appreciative inquiry. Action research was the appropriate design for this study as it was aimed at determining how teaching and learning Ethics and Human Rights can be improved in order to enhance professional conduct and ethical behaviour in the clinical radiography environment. The activities undertaken in this study are summarised in Figure 1.
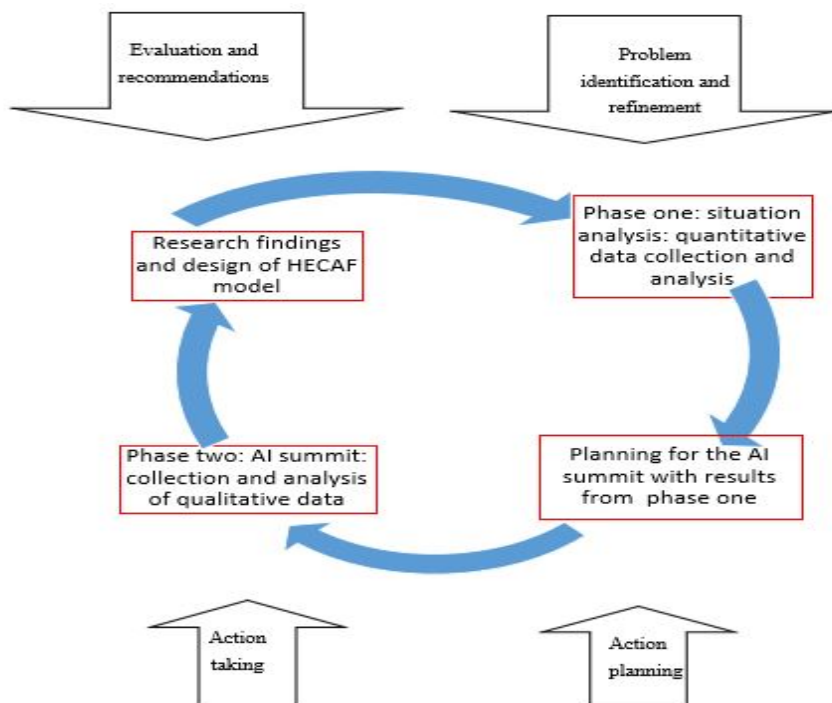


**Figure 1:** Action research completed for this study

The study had only one action research cycle. Multiple data was collected in two phases. Saldana (2011, 76) justifies the use of multiple methods in data collection as they can provide a diverse spectrum of perspectives for analysis and presentation. Phase one was the collection of quantitative data using the self-evaluation questionnaire. These questionnaires were mailed or hand-delivered to participants in all eight higher education institutions offering radiography education and training in South Africa, including their associated clinical training facilities. The results from phase one were used in defining the questions for phase two of the study. Phase two data was qualitative and was collected during an appreciative inquiry summit. Only participants from the four higher education institutions located in Gauteng were invited to the second phase.

## Sampling Strategies

For both phase one and phase two, there was one facilitator of learning from each of the eight higher education institutions. This was a form of purposive sampling; as the researchers were looking at improving teaching and learning Ethics and Human Rights, they purposely asked for facilitators of learning who had been involved with this subject in their institutions. Purposive sampling is said to be judgemental and the researcher is familiar with the population (Gray, Grove, and Sutherland 2017, 345; Polit and Beck 2008, 343). This sampling strategy was also used in phase two of the study for all three categories of participants. The criterion was predetermined (DePoy and Gitlin 2016, 199) and included only participants who had taken part in phase one of the study. With regard to selecting third-year students and the clinical supervisors in phase one of the study, simple random sampling was used. Simple random sampling as a strategy enhances the representativeness because every element in the population has an equal chance of being in the sample (Brink, Van der Walt, and Van Rensburg, 2012, 134; DePoy and Gitlin 2016, 195).

## Ethical Considerations

Ethical approval was granted by the faculties of health sciences in all the higher education institutions offering radiography education and training. In addition to the approvals granted by the different healthcare institutions, the four principles of bioethics, namely autonomy, beneficence, non-maleficence and justice, were taken into consideration during this study.

## Data Collection and Analysis

The self-evaluation questionnaire that was used for collecting data in phase one was first pretested to determine the clarity of the questions as well as the time it would take to complete. The questionnaire had four sections. Two sections were responded to by all categories of participants. One section focused on the core curriculum topics and the other one on professionalism and professional conduct. The third section of the questionnaire addressed the teaching and learning methods. The facilitators of learning and third-year radiography students responded to this section. The section on teaching

and learning strategies was responded to by the facilitators of learning only. For phase two, data was collected during the appreciative inquiry summit. Results from phase one informed the guiding questions for phase two of the study.

The appreciative inquiry summit is described in the literature according to the 4Ds, namely Discovery, Dream, Design and Destiny (Cooperrider, Whitney, and Starvros 2008, 104; Seel 2008, 5). For this study, the 4Ds model was used but in an adapted form. Instead of undertaking the four stages individually, dream and design were handled together. To ensure trustworthiness of the findings, the AI summit was facilitated by two independent experts. During the discovery stage, participants were asked to share their stories and exceptional achievements following the teaching and learning of ethics and human rights. For the dream and design aspect, participants were encouraged to envisage the desired qualities of the professional radiographer as well as to indicate how this could be achieved. For the destiny stage, participants were inspired to achieve the desired outcomes, which are to improve the teaching and learning of ethics and human rights in the undergraduate radiography programme. Audio recordings from the appreciative inquiry summit were transcribed verbatim by an independent person in preparation for analysis.

Content analysis was used in this study. It is appropriate for both quantitative and qualitative data. It is further said to extend beyond the mere differentiation between quantitative and qualitative data, as it is applicable to both inductive and deductive reasoning (Elo and Kyngäs 2007, 105; Hsieh and Shannon 2005, 1278; Mayring 2014, 10; Zhang and Wildemuth 2009, 2). The results from phase one are presented in graphs and tables while those from phase two are presented in descriptions and narratives of the participants' expressions. The findings from this study are presented next.

## Research Findings

The findings are presented according to the two phases conducted in this study. The total number of participants in phase one is presented in Table 1. For phase two of the study, there were a total of 21 participants. Four facilitators of learning, seven clinical supervisors and 10 third-year radiography students.

### Results from Phase One of the Study

In looking at the results from phase one, reference is first made to the core curriculum. The first objective, as defined for this study, was to evaluate the current teaching and learning of the subject of Ethics and Human Rights in the radiography undergraduate programme in South Africa.

**Table 1:** Total number of participants in phase one of the study

| Category of participants | Distributed questionnaires | Questionnaires received | Percentage |
|---|---|---|---|
| Facilitators of learning | 8 | 8 | 100% |
| Third-year radiography students | 170 | 107 | 63% |
| Clinical supervisors | 110 | 109 | 99% |
| **Total** | **288** | **224** | **78%** |

The study revealed that there was teaching and learning of Ethics and Human Rights taking place in the radiography undergraduate programme even though some topics of the core curriculum were not afforded the same attention. Looking at the graphs and tables provided, it is important to note that the respondents had to indicate if the topic was covered in the first, second or third year of study.
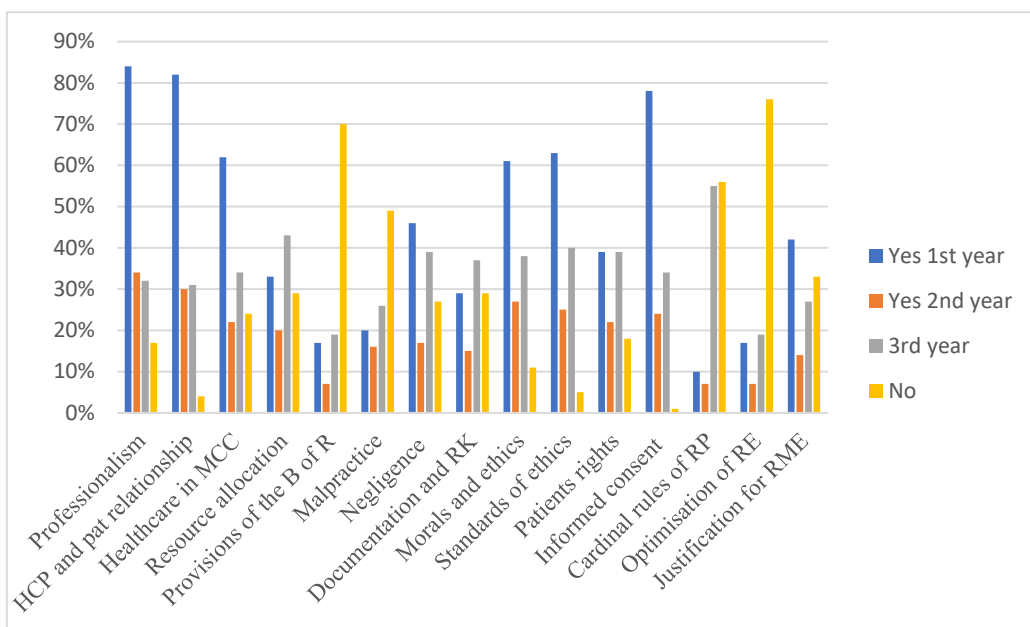


**Figure 2:** Core curriculum topics that are being taught as reported by the clinical supervisors

The results from the clinical supervisors are presented first because they are in a position to observe the way the students conduct themselves or behave in the clinical environment, as to whether they have been taught Ethics and Human Rights or not. Figure 2 shows the core curriculum topics that clinical supervisors think are covered well in class. The researchers have further noted that the results from the third-year

radiography students and facilitators of learning regarding these topics appeared to be very similar to what is presented in Figure 2.

The next step in the analysis was to try and look at the topics which appeared to be receiving less attention in teaching and learning. Figure 3 is a presentation of the topics of the core curriculum that seemed to be awarded less attention as viewed by the facilitators of learning. The researchers found it appropriate to present the results from the facilitators of learning because they had the responsibility to decide what was included or excluded from the core curriculum. In comparing these with the responses from those of the third-year students and the clinical supervisors, a very close resemblance was again noted.
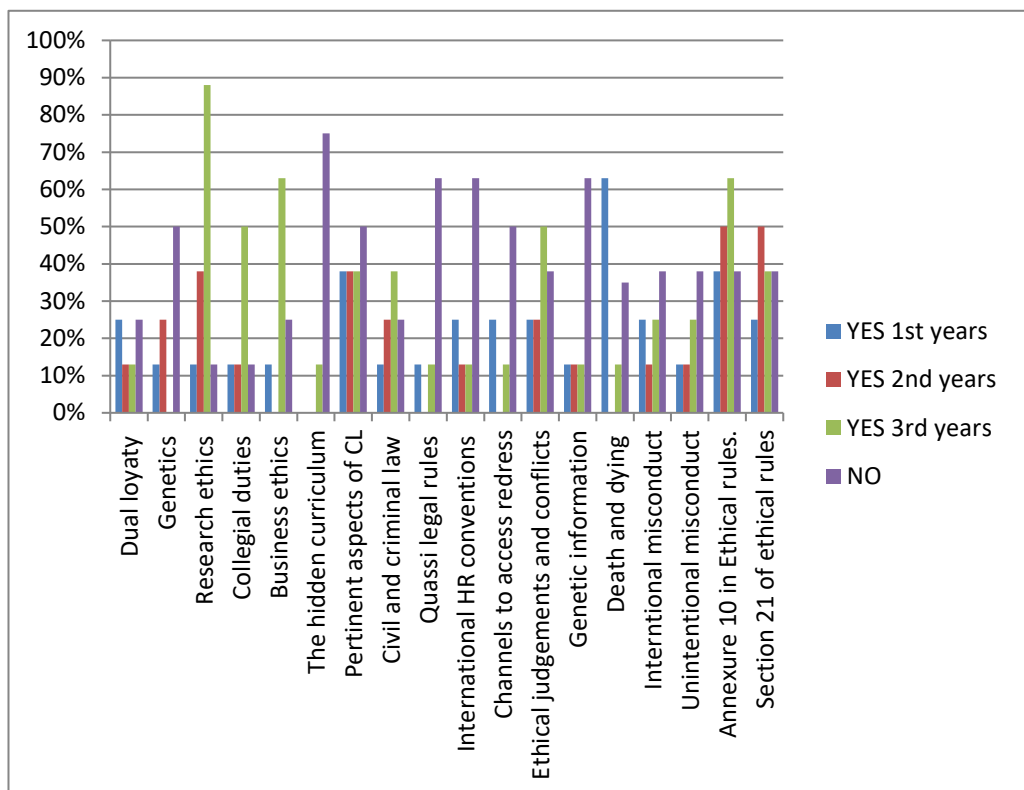


**Figure 3:** Core curriculum topics receiving less attention as reported by the facilitators of learning

The next section of the self-evaluation questionnaire focused on professionalism and professional conduct in the clinical environment. As stated by Strudwich and Day (2014, 238), radiographers interact with different healthcare professionals in the clinical environment, hence there is a need to ensure that the relations among the professionals are sound. Figure 4 is a presentation of the results on the subsection that focused on

teaching about the resolution of ethical dilemmas. Naylor and Foulkes (2018, 14) highlight the challenges with which radiographers are sometimes confronted such as during surgical operations where the surgeon might not be cooperative. According to ethics specific to radiographers, the radiographer must be capable of delivering an efficient service with the lowest radiation dose possible at all times.
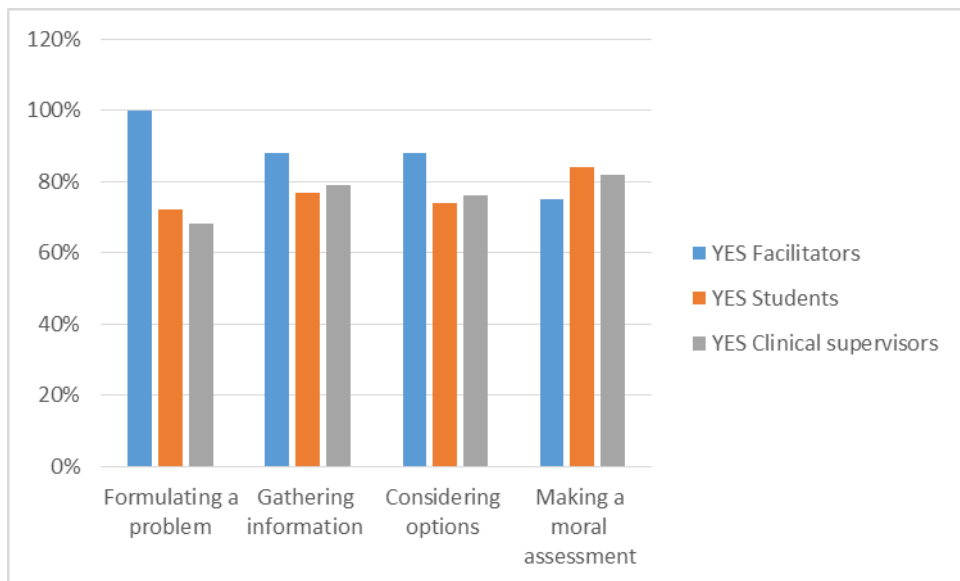


**Figure 4:** Responses on teaching and learning about the resolution of ethical dilemmas

As can be seen in Figure 4, the responses from the three categories of participants were compared. All facilitators of learning were confident in indicating that they did teach about formulating a problem even though the students and clinical supervisors did not regard it as such. The responses on the subsections, duties and obligations as well as core ethical values, showed some similar trends. The next section focused on teaching and learning methods. The responses are presented in Table 2. The responses by the facilitators of learning on the first question raise concerns. It is, however, important to note that this study did not extend into investigating which teaching and learning methods were used.

**Table 2:** Comparison of responses on teaching and learning methods provided by the facilitators of learning and third-year radiography students

| | Yes | | Uncertain | | No | |
|---|---|---|---|---|---|---|
| | *Facilitators* | *Students* | *Facilitators* | *Students* | *Facilitators* | *Students* |
| 1. There is a variety of teaching and learning methods implemented for both the theoretical and practical components of Ethics and Human Rights. | 63% | 75% | 12% | 10% | 25% | 14% |
| 2. There is a variety of assessment methods implemented in line with the teaching and learning methods. | 75% | 78% | 12% | 11% | 12% | 9% |
| 3. Teaching and learning is structured in such a way that students are able to integrate theory into practice. | 100% | 85% | | 2% | | 4% |

| 4. Teaching and learning methods are focused on the mission and vision of the programme to produce professionally registrable graduates. | 88% | 87% | | 4% | 12% | 4% |
|---|---|---|---|---|---|---|
| 5. Teaching and learning Ethics and Human Rights is structured in a way that prepares students for successful professional practice. | 100% | 79% | | 6% | | 3% |
| 6. Ethics and human rights are integrated in the theoretical assessments of the respective modules. | 88% | 69% | | 21% | | 6% |
| 7. Ethics and human rights are integrated in the practical assessments of the respective modules. | 63% | 65% | | 17% | 25% | 14% |

The last section of the self-evaluation questionnaire analysed focused on teaching and learning strategies. The results are presented in Table 3. As can be seen, the information regarding when the teaching Ethics and Human Rights is undertaken in the radiography

undergraduate programme is confirmed here. This table shows, among others, that the subject Ethics and Human Rights is integrated throughout the three years of study.

**Table 3:** Responses by the facilitators of learning on teaching and learning strategies

| *Questions* | *Responses* | | |
|---|---|---|---|
| | *Yes* | *Uncertain* | *No* |
| 1. The Radiography Department gives recognition to the importance of having Ethics and Human Rights integrated in the undergraduate programme. | 100% | | |
| 2. Ethics and Human Rights are offered as modules during one year in the radiography undergraduate programme. | 25% | | 63% |
| 3. Ethics and Human Rights are offered as modules in all three years of the radiography undergraduate programme. | 25% | | 63% |
| 4. Ethics and Human Rights are integrated in one existing module and taught as a once-off course during the three-year undergraduate programme of radiography. | 12% | | 88% |
| 5. Ethics and Human Rights are integrated in different modules and taught throughout the three-year undergraduate programme of radiography. | 100% | | |
| 6. There is one dedicated lecturer who offers Ethics and Human Rights to the undergraduate programme of radiography. | 25% | | 75% |
| 7. There are a number of lecturers offering Ethics and Human Rights as per the different modules where the subject has been integrated. | 75% | | 12% |
| 8. The lecturers who offer Ethics and Human Rights have been trained and are knowledgeable. | 88% | | 12% |

Even though the facilitators of learning who participated in this study were purposely selected based on their involvement in the teaching and learning of Ethics and Human Rights, it is shown by the responses to questions six and seven that the strategies used in the different institutions were not the same. The last question in this table supports the concern about the training and knowledge of these facilitators on the subject Ethics and Human Rights. Researchers might say at this point that there seems to be some gaps in teaching and learning Ethics and Human Rights in the radiography undergraduate programme. The next section focuses on the findings from phase two of the study.

**Findings from Phase Two of the Study**

The analysis of phase two data was conducted by the researcher and two independent coders. Through this process, consensus was reached on the identified codes, categories and themes. The five themes that emerged from this study were professional conduct, ethical behaviour, personal traits, professional traits as well as the need to design and refine a strategy to improve the teaching and learning of Ethics and Human Rights. From these themes, four major findings were made in this study.

The findings are presented according to the three stages of the summit as adapted for this study, starting with discovery. The guiding question for all categories of participants during the discovery stage was, "What is the best experience you want to share about teaching or being taught Ethics and Human Rights?" This stage could be likened to what Swart (2013, 20) described as narrative story-telling, i.e. "living in a story that has already started but is hidden or incomplete." What participants revealed as their experience was that teaching Ethics and Human Rights has made them more conscious of the need to respect patients, communicate effectively, have compassion and empathy for the patients as well as value the importance of having knowledge of relevant legislation in as much as interacting with other people, including patients, is concerned. This can be related to the humanness element in the HECAF model.

During the dream and design stage participants were asked to envisage an ideal, ethical and professionally sound radiographer and also to indicate what could be done in the teaching and learning programme to produce a radiographer of such a standard. Relating the activities during this stage of the AI summit to the SOAR (Strengths, Opportunities, Aspirations and Rewards) model, as described by Cockell and McArthur-Blair (2012, 127), is more like a strategic plan where participants are asked to be innovative in order to meet the future aspirations. Participants described an ideal professional radiographer as one who maintains good interpersonal relations, shows respect, has a patient-centred approach and knowledge, is clinically competent, can manage conflicts, is a team player, a role model and also compassionate. These characteristics of the radiographer also allude to the humanness element in the HECAF model.

The destiny stage of the AI summit was geared towards asking participants to identify small steps that could be taken towards improving the teaching and learning of Ethics and Human Rights so as to enhance professional conduct and ethical behaviour in the clinical environment. With regard to what could be done to achieve the ideal professional radiographer, participants highlighted the following: a) the teaching and learning environment should be conducive; b) there should be equipment and accessories that would allow for simulated activities; c) teaching and learning should focus on things like communication skills, interpersonal relations, assessments that align with the objectives of the teaching and learning activities as well as effective feedback. Relating to the HECAF model, which is unveiled in the next section, it is

evident that what was highlighted by the participants speaks directly to the environment, core curriculum, assessment and feedback.

## Unveiling the HECAF Model for Teaching and Learning Ethics and Human Rights in the Radiography Undergraduate Programme

To demonstrate how the generated data informed the HECAF model, Table 4 is presented to demonstrate the links between the themes, findings and the five elements of the model, which formed the original contribution from this study.

Reverting to the teaching and learning theories as well as the theories on ethics can help create an understanding of the link between the emerging themes, research findings and the original contribution that the study makes. According to the Roy Adaptation Model, the students are continuously influenced by both the theoretical and clinical stimuli in generating new knowledge which will ensure that learning takes place. Roy (2011, 312) highlights the valuable role the environment plays as the source of stimuli that initiate the adaptation process to take place in the human being or student.

**Table 4:** Linking the themes to the research findings and the HECAF model

| | *EMERGING THEMES* | *RESEARCH FINDINGS* | *ORIGINAL CONTRIBUTION* | |
|---|---|---|---|---|
| **AI SUMMIT** | Professional conduct<br><br>Ethical behaviour | The teaching and learning of ethics and human rights is taking place even though there are some topics of the core curriculum that receive less attention. | **H**umanness<br>**E**nvironment<br>**C**ore curriculum<br>**A**ssessments<br>**F**eedback | **HECAF MODEL** |
| | Personal traits<br><br>Professional traits | Ethics and human rights have a positive influence on the professional conduct and ethical behaviour of radiographers.<br>It is possible to develop an "ideal professional" radiographer. | | |

| | Design and refine a strategy to improve teaching and learning ethics and human rights | There is a need for a strategy to improve the teaching and learning of ethics and human rights. | | |
|---|---|---|---|---|
| | | | | |

Assessment and feedback have been indicated by the different participants as being essential in determining if teaching and learning is actually taking place. To explain how this model could contribute to the improvement of teaching and learning Ethics and Human Rights in the radiography undergraduate programme, each element is deliberated on briefly.

**Humanness**

Humanness must be looked at from two perspectives: first, in terms of the delivery of radiographic services to the patients who must also be regarded as participants and second, the need for good interpersonal relations among healthcare professionals in the clinical environment. Quoting the expression during the discovery stage of the appreciative inquiry summit, facilitator of learning #2 said, "Students should be taught that all patients should be treated in the same way…"; Third-year student #1 said, "When we were talking about how much information you are supposed to give to the patient…"; Clinical supervisor #2 said, "I observe students letting the patient change … They are helpful on the ones who are not able to help themselves." From these statements, it is evident that teaching and learning Ethics and Human Rights should be about relationships that must be nurtured between patients and other members of the healthcare team, and not just the delivery of knowledge. Looking at role modelling and relating it to the teaching of Ethics and Human Rights and in particular to this study, Ssebunnya (2013, 50) states that medical ethics cannot be *taught* but rather can be *learnt* through observational and situation learning and through experiential participation. This relates to the role and responsibilities of the facilitators of learning and clinical supervisors, as they are viewed as role models by the students. This brings about the hidden curriculum. From the study by Hafferty, Gaufberg and O'Donnell (2015, 136), the conclusion reached about the impact that the hidden curriculum has on the students is that it is a threat to achieving the objectives of teaching Ethics and Human Rights. Humanness can also relate to the students themselves and their willingness and readiness to learn. The second element relates to the need for a conducive teaching and learning environment.

**Environment**

Humanness, especially from the side of the facilitators of learning and clinical supervisors who are seen as role models, is critical to creating an environment that is conducive for students to learn. Radiography education takes place in a work-integrated

learning environment where the radiographers interact not only with patients, but also with other members of the healthcare team. In terms of the views of the participants, third-year student #4 and clinical supervisor #3 both alluded to the relationship between students and their supervisors in the teaching and learning environment as well as the attitudes of the students that are essential to fostering learning. From the socio-constructivist view, the individual is at the centre of creating new meaning in a conducive environment. Socio-constructivism theory, as described by Thomas et al. (2014, 2), concerns human activity where the student is an active participant. A conducive learning environment is valuable and fosters collaboration that is strongly emphasised as an essential element for authentic learning to manifest (Leppisaari et al. 2013, 10). Based on these two studies, the environment plays an important part in ensuring that learning takes place. As already alluded to, for radiography education this refers to both the academic and the clinical environments as well as the associated resources to facilitate learning. The next element that must be taken into consideration is the core curriculum.

**Core Curriculum**

This section relates to the topics of the core curriculum that are part of teaching and learning in the radiography undergraduate programme. It includes the teaching and learning methods and strategies adopted. The first finding from this study highlighted that there were topics of the core curriculum that were not afforded the same attention as others. The topics identified as being afforded less attention were research ethics, the hidden curriculum, quassi legal rules, dual loyalty and collegial duties. These topics were indeed never alluded to by the participants during the AI summit. This could be taken as an indication that the participants had little or no knowledge about them. Besides these topics of the core curriculum, Mulhearn et al. (2017, 885) highlight two areas of concern regarding teaching ethics in the healthcare professions: a) there is no systemic procedure to classify the variety of instructional approaches available; and, b) there are different instructional objectives. These statements can further be related to teaching and learning methods as well as strategies, which, as the study demonstrated, seem to be different from one institution to the other. The findings from this study, however, confirm that the subject of Ethics and Human Rights is integrated throughout the three years of study in the radiography undergraduate programme.

Looking at the topics that are given more attention in teaching and learning in radiography, these were found to be radiography-specific issues. Support for profession specific topics is advocated by Patrick (2017, 3), who refers to the profession as a reference point, and adhering to the regulations in that profession is taken to mean that one is practising ethically. With reference to the teaching and learning methods, participants presented the following views during the appreciative inquiry summit. Third-year student #5 said, "Teach content and have a seminar where students will discuss content." Facilitator of learning #4 said, "Provide learning opportunities that are relevant to students today." Clinical supervisor #3 said, "Give them more practical hours

to get the things they were taught done in practice." These statements are indications that there is a need to make improvements in the methods being used. Teaching and learning methods must further be aligned with the assessments used.

**Assessments and Feedback**

Assessment and feedback are important pillars of teaching and learning, as they are used as measures to determine if the expected outcomes have been achieved or not. Tam (2014, 161) describes three aspects involved in assessments, namely monitoring, confirming and improving student learning. Biggs's (2003) theory of constructive alignment places emphasis on the need to have assessments aligned with the teaching and learning activities as well as the identified outcomes. Biggs (2003, 2) further argues that the types of questions set for a particular assessment influence the students' learning. This theory has its roots in constructivism, as it states that the students construct their own learning through relevant learning activities (Larkin and Richardson 2013, 193).

The participants' narrative statements were captured during the destiny stage of the AI summit. Third-year student #1 said, "Have the test on Ethics and Human Rights in theory and practical." Third-year student #7 added to this by saying, "Have surprise evaluations by the lecturer [like] 'a mystery patient.' [The lecturer should] obtain feedback from the clinical supervisor on the conduct of students in the clinical department." Clinical supervisor #5 contributed by saying, "There should be examinations on Ethics and Human Rights throughout the time of study." Another important point that came out of this study regarding feedback was that it should not be limited to the assessments being conducted on students. Facilitators of learning should also take into cognisance the feedback or input that was provided by the students as well as the clinical supervisors. This could be feedback on how the radiography undergraduate programme was run or on the specific subjects like Ethics and Human Rights.

# Conclusion and Recommendations for Further Studies

This study has demonstrated the following through the multiple data collection and content analysis: a) there is integration of the subject of Ethics and Human Rights in the radiography undergraduate programme even though there are some topics of the core curriculum that are not afforded the same attention as others; and b) teaching Ethics and Human Rights has influenced the conduct and behaviour of radiographers in the clinical environment positively. Another important point that emerged from this study is that it is possible to develop an ideal professional radiographer. This can be argued based on the need to consider all five elements of the HECAF model in teaching and learning. It is hereby argued that the HECAF model could contribute to the improvement of teaching and learning Ethics and Human Rights in the radiography undergraduate programme. The recommendations for further studies include the need to investigate the teaching and learning methods that are currently being used, the qualifications, skills

and attitudes of the facilitators of learning as well as the need to collect qualitative data from participants in higher education institutions outside Gauteng.

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