Softening the Science: Laying Foundational Knowledge of Radiation Protection Principles For Future Generations

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Faculty of Health Sciences
Fakulteit Gesondheidswetenskappe
Lefapha la Disaense tša Maphelo

https://www.facebook.com/watch/?v=345284076764417





First-year radiography students – University of Pretoria, South Africa

"Beyond technical proficiency – role of soft skills in medical radiation science" - *Ofori-Manteaw et al*

2025

- First year radiography students/ radiation technologists
- Soft skills – Communication (patients and medical team)
- Ethical issues – Justification
- Radiation protection principles
- ALARA
- Dose optimization
- Lead shielding
- Dosimetry

ICRP recommendations

The International Commission on Radiological Protection (ICRP) provides independent recommendations and guidance on radiological protection, based on three fundamental principles: ***justification, optimization, and dose limitation,*** to protect humans and the environment from the risks of ionizing radiation.

2024 - 2028
STRATEGIC PRIORITIES

ICRP
International Commission on Radiological Protection

Guiding Radiological Protection Since 1928

STRENGTHEN ENGAGEMENT WITH PROFESSIONALS, POLICY MAKERS, AND THE PUBLIC

Key Actions

Work with stakeholders, especially in the review of the System of Radiological Protection, through ICRP symposia, open workshops, and consultation

Engage with patients, workers, and the general public using ICRPÆDIA, social media, and other means

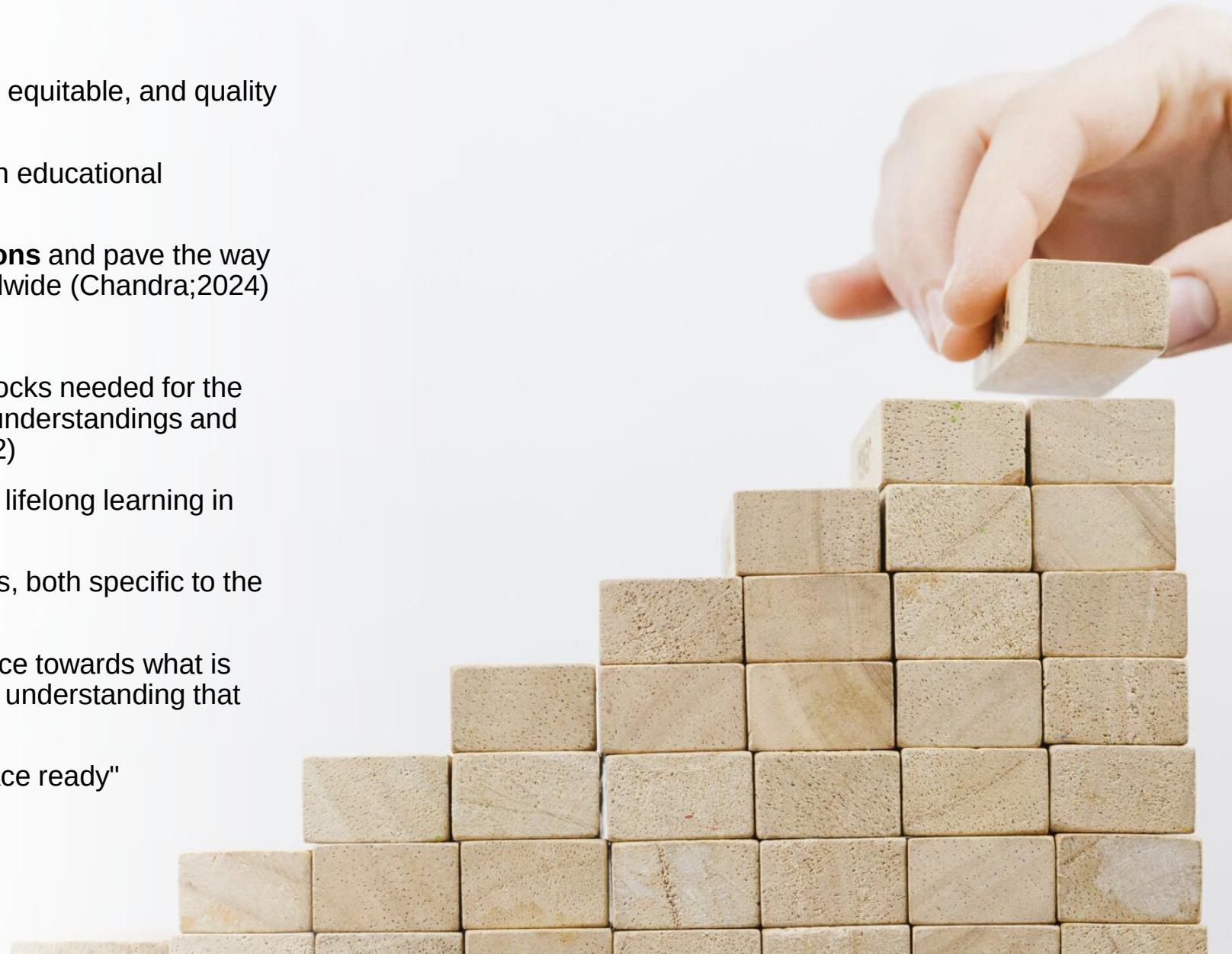
Increase outreach worldwide focusing on:

- Education and training
- Affected populations
- Under-served regions of the world

Foundational knowledge

- Sustainable Development Goal 4 -inclusive, equitable, and quality education for all.
- Foundational learning skills for children is an educational necessity and a moral imperative.
- Unlock the full potential of **future generations** and pave the way for a brighter, more prosperous **future** worldwide (Chandra;2024)

- Foundational knowledge - basic building blocks needed for the sequential and cumulative development of understandings and skills in a specific discipline. (Mcclinnis;2002)
- For higher education - learning required for lifelong learning in particular fields.
- Learning of broader values and perspectives, both specific to the field of study or discipline, and beyond.
- This dimension moves the student experience towards what is frequently referred to as the knowledge and understanding that transcends the specifics of the field of study
- Students who are "graduateness or workplace ready" (Mcclinnis;2002)



Challenges

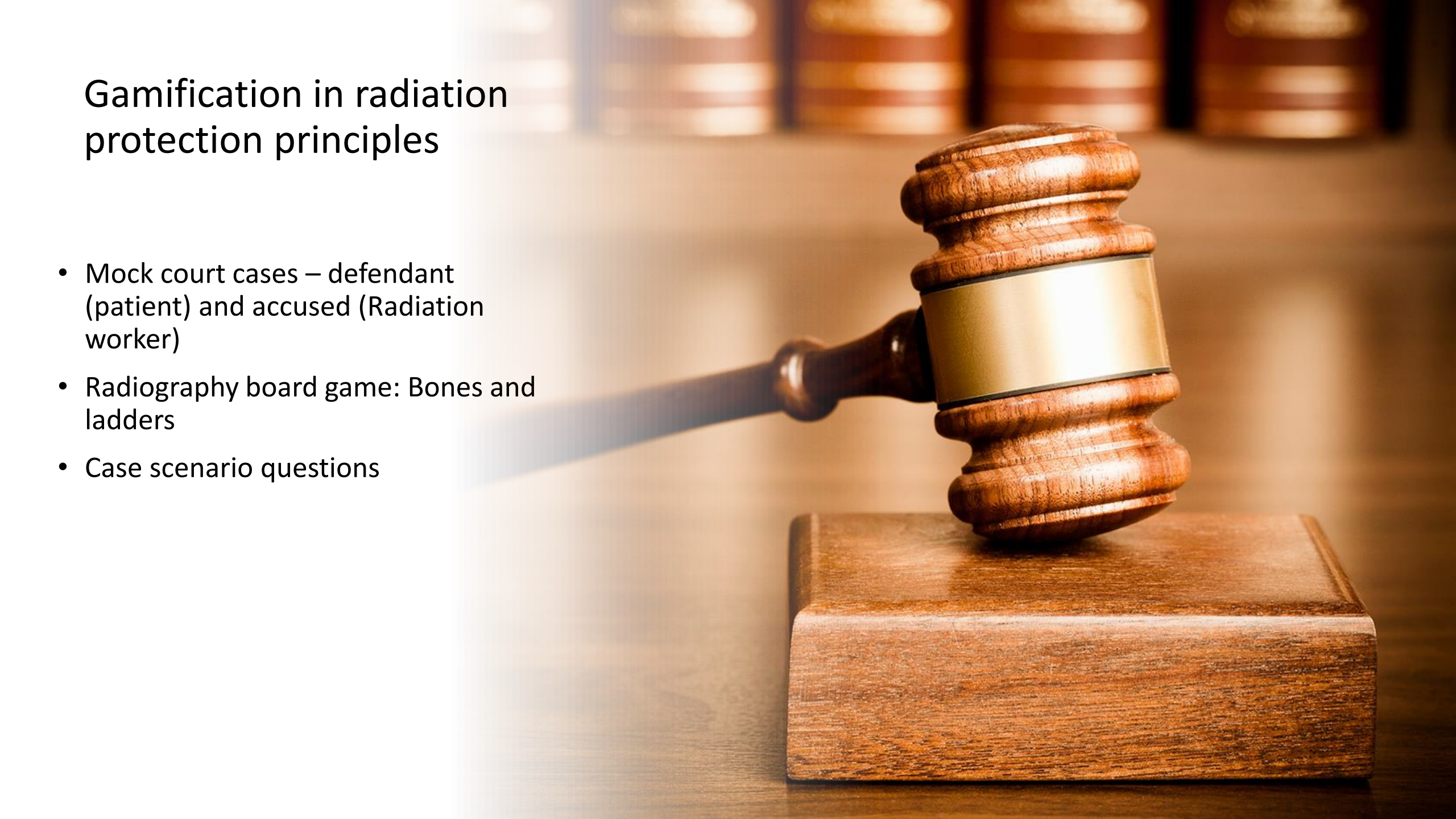
Professional role modeling

Teaching the Gen Z's

Roles and responsibility as a first-year educator is to help students to:

Gamification in radiation protection principles

- Mock court cases – defendant (patient) and accused (Radiation worker)
- Radiography board game: Bones and ladders
- Case scenario questions

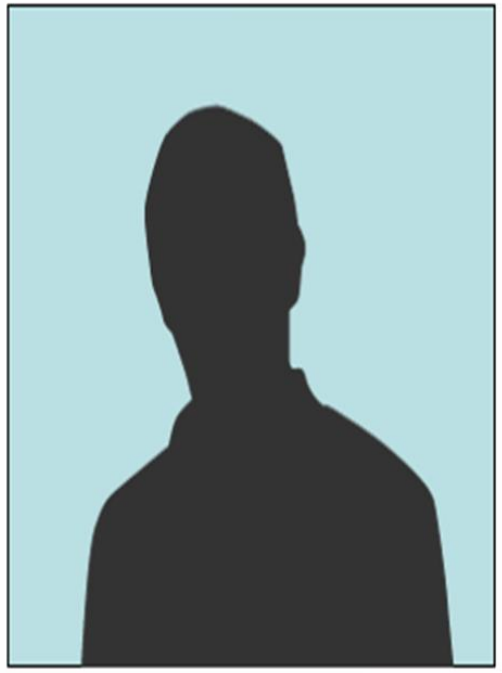


Pregnant patient is in the waiting area and sees the no pregnant patients allowed sign. The patient has anxiety, explain how you will appropriately communicate radiation risk to the patient.

THE DAILY NEWS

www.dailynews.com THE WORLD'S FAVOURITE NEWSPAPER • Since 1879

Mother pins blame on chest x-rays as the cause of her child developing cancer



A mother of a five year old child claims that her son developed cancer due to x-ray exposure received whilst having undergone chest x-rays.

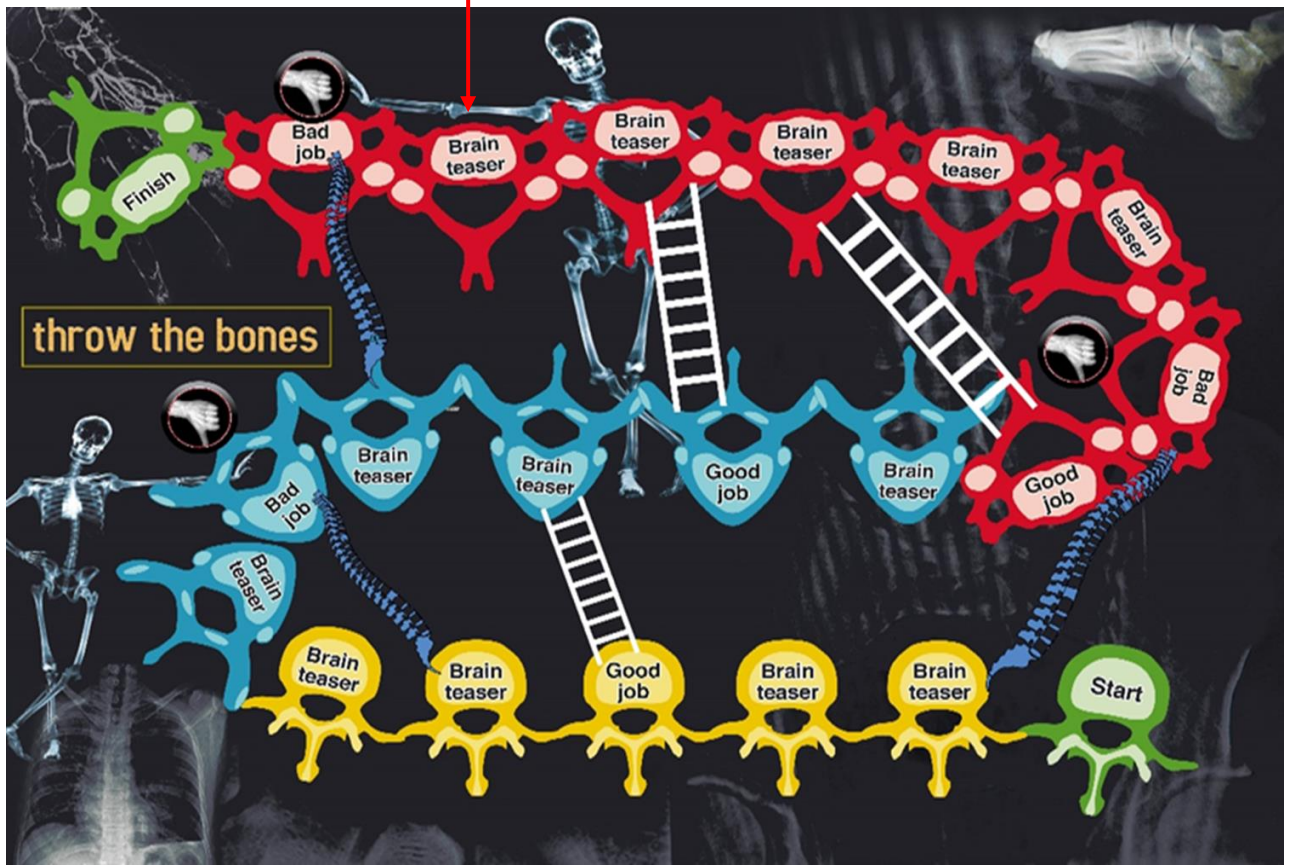
Ms Flower reports her son swallowed a coin and was referred for several x-rays. A month later her child was diagnosed with nephroblastoma, a cancer found in children that affects the kidneys. "I have been doing a lot of research on the dangers of x-rays and cancer, the radiographer is responsible for this, my baby was healthy and well and after that x-ray, this just happened. I'm devastated."

Ms Flower further reports the radiographer doing the x-rays failed to used radiation protection devices on her child which further lead to the cancer. The accused radiographer was not available for comment. You are invited to attend the court proceeding, scheduled to take place on the

18 July 2018, 09h00 at the HW Snyman Building, Room 3-25.

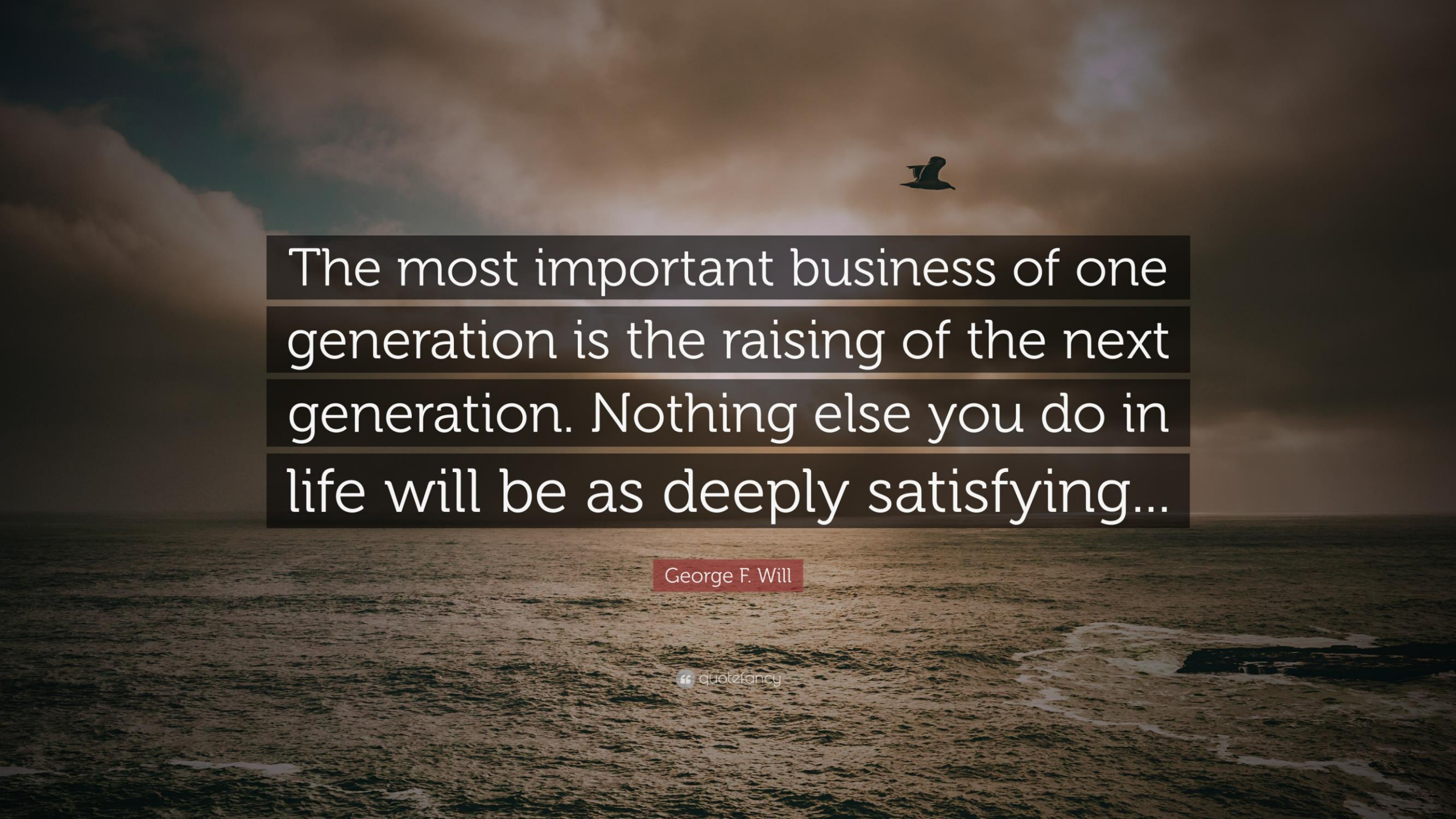
where the radiographer will state his side of the story. For more information on this story, contact Hafsa Essop at hafsa.Essop@up.ac.za

*fictional story



ICRP: An in instrument of change

- Deeper understanding of the history of radiation effects
- ICRP task group 123 (mentorship program)
- Actively engaged in literature synthesis of ICRP publications
- Involved in thought provoking discussions with experts
- REALLY nice people
- Conscious of the magnitude and importance of radiation protection globally
- Disseminate accurate, up to date and understandable information to underserved regions - softening the science


The most important business of one generation is the raising of the next generation. Nothing else you do in life will be as deeply satisfying...
George F. Will
quotefancy

References

Chandra, R., 2024. Shaping Foundational Learning Skills: A Harbinger to the Future of Work. *GNOSI: An Interdisciplinary Journal of Human Theory and Praxis*, *7*(1), pp.103-113.

McInnis, C., 2002. The place of foundational knowledge in the Australian undergraduate curriculum. *Higher Education Policy*, *15*(1), pp.33-43.