

# Perceptions of Radiography Students Regarding the Qualities of an Effective Clinical Educator in Zambia

Bwanga, O.<sup>1</sup>, Iyamwa, P.<sup>2</sup>, Chanda, E.<sup>3</sup>, Bwalya, M.<sup>4</sup>

## Abstract

**Background:** Clinical education is the most influential and important component for the preparation of future radiographers. During clinical education, experiences of radiography students are formalised, managed, and assessed to ensure competence in radiography. Clinical educators are vital to this development and help students apply theory to practice. In Zambia, the qualities of effective clinical educators of radiography students are not well-defined. This study explored the perceptions of radiography students regarding the qualities of an effective clinical educator in Zambia.

**Methodology:** The study was conducted at the Lusaka Apex Medical University (LAMU) of Zambia, using a qualitative exploratory research design. Data was collected using semi-structured interviews with a purposive sample of eight radiography students. Data was audio-recorded, transcribed, and analysed using framework analysis.

**Results:** Three qualities of an effective clinical educator were identified: clinical competence skills, clinical education skills, and personal attributes. Exhibiting knowledge and experience in radiography and teaching, and displaying good communication skills were the most common qualities of an effective clinical educator that enhanced the learning experiences of radiography students. On the other hand, favourism was the main negative quality reported of clinical educators which hindered the radiography students' learning process.

**Conclusion:** The identified qualities of clinical educators will help radiographers who supervise students to self-assess, develop, and maintain the qualities necessary for effective clinical education. The study findings will also help schools of radiography to support their clinical educators and can be used for clinical education quality assurance.

**Keywords:** Clinical educator, Clinical education, Quality, Radiography student, Zambia

## Introduction

In Zambia, radiography education requires students to demonstrate clinical competence to gain registration with the Health Professions Council of Zambia (HPCZ) and to practice as radiographers. To achieve this, students

undertake clinical education under the support of clinical educators. Rose and Best (2005) define clinical education as the practice of assisting a student to acquire the knowledge, skills, attitudes, and competence in practice settings to meet the standards defined by the regulator.

The term clinical education is a new term in radiography. An earlier and more commonly used term for clinical education was clinical supervision. Old titles to denote a clinical educator include clinical supervisor, clinical tutor, and clinical instructor. The clinical

<sup>1</sup> Midlands University Hospital, Tullamore

<sup>2</sup> Lusaka Apex Medical University

<sup>3</sup> Cancer Diseases Hospital and Lusaka Apex Medical University

<sup>4</sup> St. Francis Hospital and University of Lusaka

Corresponding author: Dr. Oswald Bwanga

Email: o.bwanga@yahoo.com

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education component of the four-year undergraduate radiography course at Lusaka Apex Medical University (LAMU) of Zambia consists of simulation experiences and clinical practice at affiliated hospitals (LAMU, 2011).

For clinical educators to perform their role efficiently and effectively, they should develop their competence in clinical education. According to Rose and Best (2005), clinical educators go through three stages of professional development: novice or beginner, advanced beginner, and competent educator. In the first stage, the novice clinical educator has no experience and lacks confidence in teaching. Clinical educators may require other experienced colleagues to observe them (McAllister & Lincoln, 2004; Rose & Best, 2005). In the second stage of advanced beginner, the clinical educators start getting experience by trying out new ways of managing teaching that requires less support from colleagues (McAllister & Lincoln, 2004). In the last stage, clinical educators achieve a level of expertise in their work (Rose & Best, 2005). The role of competent or expert clinical educators is to support both students and novice clinical educators.

The qualities of a clinical educator are crucial to the student's learning process. Literature reports that students' experiences and satisfaction are often associated with the effectiveness of their clinical educators (Ingrassia, 2011; Niederriter et al., 2017; Soroush et al., 2021). Several studies have examined the qualities of an effective clinical educator in the nursing profession (Niederriter et al., 2017; Soroush et al., 2021). There are a limited number of studies related to this topic within the radiography profession. During the literature search, only one study conducted in

the United States of America (USA) by Ingrassia (2011) related to the radiography profession was found. In this study, students reported the demonstration of knowledge and clinical skill, fair and objective assessments, and approachability as the most important qualities of an effective clinical educator which enhanced their learning.

The search of clinical education documents revealed no defined qualities of effective radiography clinical educators in Zambia. Currently, there is an increase in the enrolment of radiography students with a limited number of clinical training sites (Kayembe & Bwanga, 2020; Bwanga et al., 2021). Thus, clinical educators must be effective and efficient to maximise clinical teaching and learning for students. This study, therefore, was aimed at exploring the perceptions of radiography students regarding the qualities of an effective clinical educator in Zambia. The results can help clinical educators to self-assess, develop, and maintain qualities for effective clinical teaching. In addition, the study findings could be used for clinical education quality assurance.

## Methods

A qualitative exploratory research design was used to conduct this research at LAMU of Zambia. LAMU is a private medical university that was established in 2008 to offer health professional courses. Eight participants were purposely recruited out of the population of 95 radiography students (66 third years and 29 fourth years). The inclusion criterion was radiography students at LAMU in the 3<sup>rd</sup> and 4<sup>th</sup> years because of their experience in clinical education. Figure 1 shows the graphic presentation of the methodology.

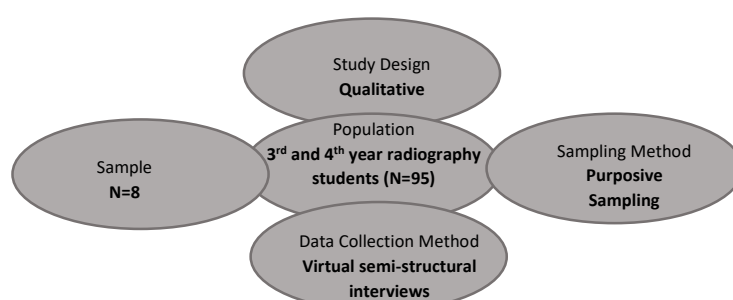


Figure 1: Study methodology

Semi-structured interviews were used to collect data, guided by an interview schedule. Due to COVID-19, interviews were conducted and recorded using Zoom virtual communication tools in March 2022. After the study was approved by LAMU Bio-Medical Research Ethics Committee (Ref: 00003-22), a pilot study was conducted with two participants from the study population to refine the interview questions and test the interview schedule and virtual communication tools. These were excluded from the main interviews. After the pilot study, eight participants: 4 third and 4 fourth years (Table 1) were interviewed focusing on the qualities of effective and ineffective clinical educators, and how these qualities affect students' learning processes. The recruitment of participants stopped upon reaching data saturation when no new information emerged from the interviews (Bryman, 2016). Interviews were conducted in English and the duration ranged from 20 to 30 minutes. Informed consent was obtained by e-mail from each prospective participant before the interview. To protect the identity of participants, codes were used rather than their names.

Interview recordings were transcribed verbatim and were shared with respective participants for member checking to enhance the credibility of the data (Bryman, 2016). Data was analysed manually using three steps of framework analysis recommended by Lacey and Luff (2009). Data analysis steps followed firstly by familiarisation with the data by listening to the recordings and reading the transcripts. Secondly, the identification of a framework from the literature: clinical competence, clinical tutoring skills, and personnel attributes (Rose & Best, 2005; Burgess et al., 2015; Bwanga & Lidster, 2019). Thirdly, the coding and identification of sub-themes were matched in line with the framework.

## Results

Table 1 shows the demographic characteristics of the participants. Following data analysis, nine sub-themes were developed under the three priori themes of clinical competence skills, clinical education skills, and personal attributes (Table 2).

**Table 1: Demographic data of participants**

Participant	Year of radiography study	Gender
1	3 <sup>rd</sup>	Male
2	3 <sup>rd</sup>	Male
3	4 <sup>th</sup>	Female
4	4 <sup>th</sup>	Male
5	4 <sup>th</sup>	Female
6	3 <sup>rd</sup>	Female
7	4 <sup>th</sup>	Female
8	3 <sup>rd</sup>	Female

**Table 2: Qualities of an effective clinical educator in radiography**

Themes	Sub-themes
<b>Theme 1:</b> Clinical competence skills	<ul style="list-style-type: none"> <li>• Exhibit professional knowledge and experience in radiography</li> <li>• Display good communication skills</li> </ul>
<b>Theme 2:</b> Clinical education skills	<ul style="list-style-type: none"> <li>• Demonstrate good planning and time management</li> <li>• Provides students with demonstrations and hands-on practice</li> <li>• Provides constructive feedback</li> <li>• Demonstrate fairness to all students</li> <li>• Being a positive role model for students</li> </ul>
<b>Theme 3:</b> Personal attributes	<ul style="list-style-type: none"> <li>• Passionate about radiography and clinical teaching</li> <li>• Demonstrates good relationships</li> </ul>

### *Theme 1: Clinical competence skills*

This theme had two sub-themes: exhibit professional knowledge and experience in radiography, and good communication skills.

#### *Sub-theme 1: Exhibit professional knowledge and experience in radiography*

All participants felt that an effective clinical educator should be knowledgeable and experienced in radiography to effectively pass the knowledge and skills to students.

*"I believe an effective clinical educator should be someone who is experienced in radiography and can teach me how to X-ray patients."* (3RS08)

*"A competent person so that when he or she teaches me no one else will come to tell me that the information previously given was wrong."* (4RS03)

Participants reported that it is difficult to relearn new information when another clinical educator tells them something different. This can result in a loss of confidence and hinders the learning process. Some participants also believed that an effective clinical educator should be up to date with information

*"Should be up to date with scientific changes in medical imaging to share with students."* (4RS04)

#### *Sub-theme 2: Display good communication skills*

All the participants identified an effective clinical educator as someone who displays good communication skills; listens to the students and gives them a chance to speak.

*"An effective clinical educator should be someone that should make me understand, should be clear, and interesting."* (4RS03)

*"Should be able to communicate at my level. I can get interested in the learning and make my learning experience something joyful."* (4RS05)

### *Theme 2: Clinical education skills*

This theme had five sub-themes: demonstrate good planning and time management, provides students with demonstrations and hands-on practice, provides constructive feedback to students, demonstrates fairness to all students, and acts as a positive role model for students.

#### *Sub-theme 1: Demonstrate good planning and time management*

Good planning and time management for students' clinical training were qualities of an effective clinical educator identified by participants. Most participants believed that the clinical educator needs to plan lessons according to the level of training of students and learning outcomes. In addition, participants believed that an effective clinical educator should be punctual and be available for students during clinical training to complete the prescribed learning outcomes within the allocated time.

*"Someone who is always on time for clinical training. I feel, I can acquire more knowledge and skills from a clinical educator who reports on time."* (3RS06)

*"I believe an effective clinical educator should be available during clinical training hours to supervise his or her students."* (4RS05)

#### *Sub-theme 2: Provides students with demonstrations and hands-on practice*

Most of the participants felt that an effective clinical educator should provide students with demonstrations and an opportunity to apply theory to clinical practice. It was clear during the interviews that demonstrations provide students with experience simulating the clinical practice and improves their understanding of the examinations.

*"A clinical educator should demonstrate what they are talking about. For example, demonstrate to students how to undertake an ultrasound of the liver."* (3RS01)

One participant described an ineffective clinical educator as one who does not give students an opportunity to practice:

*“Someone who can’t help students and give chance to students to practice” (3RS01).*

A lack of hands-on practice was identified as a hindrance to learning.

#### *Sub-theme 3: Provides constructive feedback*

Providing constructive feedback to students on their clinical performance is another important quality of an effective educator revealed during the interview. Some participants believed that constructive feedback which contains both positive and negative comments help students to improve their performance:

*“An effective clinical educator provides feedback to students that reinforce good performance, motivates and reduces anxiety” (4RS03).*

Some participants described a radiographer who shouts at students in front of patients when they make a mistake as an ineffective clinical educator.

#### *Sub-theme 4: Demonstrate fairness to all students*

Some participants strongly believed that an effective clinical educator should be fair to all students during clinical teaching and assessment of their performance. Showing favoritism to some students hinders the learning process of those not being favored:

*“A clinical educator who shows that he or she has favourites students is very demeaning to unfavourite students and can affect their performance badly” (4RS05).*

Participants also believed that an effective clinical educator provides a valid and reliable assessment:

*“Tends to assess their students on what was covered during clinical training” (4RS04).*

It also emerged that ineffective clinical educators who show favouritism hinder the learning process of other students:

*“Favorism lowers my confidence because some students are favoured and given best practice during clinical training.” (4RS05)*

#### *Sub-theme 5: Being a positive role model for students*

Being a role model for students was one of the qualities of an effective clinical educator identified during interviews. Most participants reported that they learn by observing the practices and attitudes of their clinical educators. Participants felt that clinical educators should demonstrate the same qualities being taught to students during their clinical training:

*“A clinical educator should be a positive role model, familiar and adhere to the code of professional conduct for radiographers issued by the Radiological Society of Zambia” (4RS03).*

Another participant had this to say:

*“Someone who can professionally conduct himself” (4RS07).*

Good role models were reported to produce professional graduates.

#### *Theme 3: Personal attributes*

This theme had two sub-themes: passionate about radiography and clinical teaching, and demonstrating good relationships.

##### *Sub-theme 1: Passionate about radiography and clinical teaching*

Some participants believed effective clinical educators should have a passion for radiography and clinical teaching to motivate students:

*“I believe that a passionate and enthusiastic clinical educator can motivate radiography students to learn more during their clinical training” (4RS04).*

Another participant added,

*“I feel when a clinical educator is teaching his or her students with energy and interest during their clinical practice, he or she can transfer that energy and interest to his students. This can enhance the learning experiences of his students” (4RS05).*

Participants stated that a passionate clinical educator motivates them to work hard and inspires students to become better radiographers. However, some participants identified an ineffective clinical educator as one who has a negative attitude towards students and lacks interest in clinical teaching.

#### *Sub-theme 2: Demonstrates good relationships*

One of the qualities of an effective clinical educator identified during interviews was a radiographer who creates a conducive clinical learning environment where students feel comfortable participating in the imaging of patients and asking questions.

*“Being human beings respect is needed during clinical training. The clinical educator needs to get and respect the opinions that can help us learn.” (3RS01)*

Some participants felt that when a clinical educator is friendly and approachable, students won't be reluctant to ask questions and seek clarifications:

*“A clinical educator should be friendly with students. If not, students will be scared to interact with him or her. A clinical educator should not behave authoritarian” (3RS02).*

Another participant added:

*“Should be patient, gentle, and not rough to avoid hindering the students from learning.” (3RS06)*

## **Discussion**

The discussion of the findings is done under three qualities of a clinical educator identified in

this study: clinical competence skills, clinical education skills, and personal attributes.

### *Clinical competence skills*

Clinical competence encompasses professional knowledge and clinical skills, clinical reasoning, and decision-making (Burgess et al., 2015). This study identified clinical competence skills as one of the qualities of an effective clinical educator. This finding concurs with a previous study conducted by Ingrassia (2011) where most of the radiography students indicated the demonstration of clinical competence as an essential quality of an effective clinical educator. In the context of this study, clinical competence includes radiography and communication skills. It should be noted that communication skills, such as speaking, listening, reading, and writing are essential for the transmission of information during clinical teaching, and for providing feedback to students.

### *Clinical education skills*

Clinical education skills involve understanding and applying the educational principles relating to the clinical training of students (McAllister & Lincoln, 2004; McKimm & Swanwick, 2010). An effective clinical educator plans lessons by integrating the learning needs of students with defined learning outcomes and gives opportunities to students to apply theory to clinical practice (McKimm & Swanwick, 2010; Bwanga & Lidster, 2019). This study found that providing constructive feedback is one of the qualities of an effective clinical educator. In a previous study by Kayembe and Bwanga (2020), radiography students reported the provision of feedback containing both positive and negative comments as an attribute that enhanced their learning during clinical training. Positive comments about students' performance enhanced their confidence to repeat the desired action and engagement in clinical work, whilst negative comments helped students to identify their weak areas for improvement (McKimm & Swanwick, 2010; Bwanga, 2020). In a study by Niederriter and others (2017), nursing students reported that they did not mind being corrected, but if clinical

educators rebuked them, it made them feel afraid to approach them. Therefore, clinical educators should be polite and treat all students fairly to enhance their learning processes.

Literature reports that most of the learning associated with attitudes and values is concerned with the process of professional socialisation through role modelling (Rose & Best, 2005; Bwanga, 2019). This study identified role modelling as one of the qualities of an effective clinical educator. This finding concurs with a study by Niederriter and others (2017) where nursing students felt that clinical educators should be role models for students and demonstrate the same qualities that they are asking students to emulate. Therefore, clinical educators should constantly reflect upon their attitudes, practices, and behaviours as students emulate their conduct (Bwanga, 2019; Bwanga & Mwansa, 2022). This means that everything a clinical educator does, whether positive or negative, is likely to be regarded by students as an acceptable attitude, practice, and behaviour. Although this study identified role modelling as a teaching method, relying on it alone to teach professionalism to students during their clinical training can be risky (Bwanga, 2019; Bwanga & Mwansa, 2022). This is because students can easily learn unprofessional attitudes, practices, and behaviours. For this reason, clinical educators should teach professionalism based on the professional code of conduct for radiographers, and other appropriate literature.

#### *Personal attributes*

Literature reports that the foundation of being an effective clinical educator lies in building a good working relationship with students and being passionate about the facilitation of students' learning (McAllister & Lincoln, 2004; Bwanga & Lidster, 2019). This corresponds with the findings of our study. In a nursing study, students also reported that effective clinical educators are consistently passionate and confident in their approaches to students and teaching (Soroush *et al.*, 2021). Other qualities of an effective clinical educator identified in this study are approachability and accessibility to students. In Ingrassia's (2011) study, half of the

radiography students also indicated approachability, accessibility, and availability to students as the most essential qualities of a clinical educator. However, in a nursing study by Niederriter and others (2017), students described nurses who make them feel stupid when asked some questions as ineffective clinical educators. This is a reminder to clinical educators to establish good working relationships with students to promote a conducive environment.

#### **Conclusion**

The important qualities of an effective clinical educator identified in this study include good communication skills, knowledge, and experience in both radiography and clinical education. When recruiting clinical educators, schools of radiography should consider experienced radiographers, and establish feedback evaluation of clinical educators by students. The job description and advertisement should emphasise the qualities of effective clinical educators. Also, a successful candidate should undertake a preparatory clinical education course before taking up the role of clinical training of students.

#### **Conflict of interest:**

None

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