Supportive Function of the Clinical Supervision of Radiography Students

Abstract
Clinical supervisors are faced with daily challenges of managing and supporting radiography students from all levels of training and with varying degree of autonomy. However, there is a lack of literature and guidelines to support radiographers who provide practice-based learning to radiography students with learning difficulties and disabilities during clinical practice. The purpose of this article is to bring about awareness and provide information and guidance to clinical supervisors of radiography students on how to support learners with learning difficulties and disabilities. This information will also be useful to other healthcare professionals, such as nurses, pharmacists, physiotherapists, and medical doctors who facilitate practice-based learning for healthcare students in the clinical environments.

Keywords: Bullying, disability, harassment, learning difficulty, radiographer, radiography student, stress, struggling student.

INTRODUCTION
Clinical practice is an essential component of radiography education which allows students to develop their competences under the supervision of radiographers who act as clinical supervisors (College of Radiographers, 2012). Clinical practice provides an opportunity for students to integrate theory with practice and attain the social and technical skills that are required to practice as radiographers. A clinical supervisor constitutes an important resource in this professional development. One of the roles of a clinical supervisor is to support students with learning difficulties (Murphy, 2011; University College Dublin, 2011). There are two other terminologies used to describe learning difficulties: “disability”, and “disorder” (Murphy, 2011; Walsh, 2014). For this article, “learning difficulties” refers to a struggle or impediment with the learning process (L’Ecuyer, 2019). It is the responsibility of the schools of radiography and clinical departments to support students with learning difficulties and disabilities (College of Radiographers, 2010a; Murphy, 2011).

The facilitation of practice-based learning is demanding and complex, as clinical supervisors also provide care to patients as their primary responsibility (College of Radiographers, 2012; Kayembe & Bwanga, 2020). Students with learning difficulties and disabilities often pose an even greater challenge as they warrant closer clinical supervision. Clinical supervisors may also require specific clinical teaching skills to support these students (Murphy, 2010; Boileau et al., 2017; L’Ecuyer, 2019). Unfortunately, global literature indicates that most radiographers who supervise radiography students during clinical practice are not trained in the facilitation of practice-based learning (Lee, 2015; Du Plessis, 2019). Literature also shows a lack of communication from schools of radiography to clinical departments on radiography students with learning difficulties (Murphy, 2011). This puts clinical departments in an awkward position and can negatively affect the experiences of both radiography students and their clinical supervisors.

To support students with learning difficulties effectively and efficiently, clinical supervisors should have appropriate training on issues of equality, inclusion and supportive measures for students with learning difficulties.
difficulties (Murphy, 2011; University College Dublin, 2011). Furthermore, clinical supervisors should have access to educational and support resources, such as guidelines, journal articles and clinical education textbooks (University College Dublin, 2011). Globally, there is a lack of literature regarding supporting radiography students with learning difficulties and disabilities. Most of the literature on this subject is from the nursing and medical professions and is used in this review to supplement the radiography literature.

This article is, therefore, aimed at providing information and guidance on how to manage and support radiography students who are struggling with studies, those who are bullied, harassed, stressed and those with learning difficulties and disabilities (Figure 1).

Supportive function of the clinical supervision of radiography students

Supporting Struggling Students during Clinical Practice

The clinical supervisor has a responsibility to manage struggling or failing students so that they may either enhance their performance and capabilities for safe and effective practice or be able to understand their failure and the implications of this for their future careers (Walsh, 2014). Steinert (2008) defines a struggling student as a learner who does not meet the expectations of a training programme. These pose a challenge to clinical supervisors since these learners warrant closer supervision (Boileau et al., 2017). As a result, these clinical supervisions have been associated with reactions from clinical supervisors ranging from helplessness to frustration and avoidance (Houghton, 2016). Clinical supervisors often perceive that they are ill equipped to supervise struggling students efficiently (Boileau et al., 2017). However, clinical supervisors should not be reluctant to protect members of the public as only competent radiographers should have the opportunity to register with a specific regulator, such as the Health Profession Council of Zambia (HPCZ).

Providing feedback is a vitally important aspect of supporting a struggling student (Walsh, 2014). Constructive feedback clarifies goals and expectations, reinforces good performance and provides a basis for correcting mistakes (Krackov, 2009; Walsh, 2014; Harden & Laidlaw, 2017; Kayembe & Bwanga, 2020). However, literature shows that feedback is rarely given to students due to workload and a lack of training amongst clinical supervisors (Krackov, 2009; Kayembe & Bwanga, 2020). Feedback is best delivered to a student when a clinical supervisor uses the principles of giving constructive feedback, such as balancing positive and negative comments, being clear and specific, giving it in private, inviting self-assessment of the student and basing the feedback on first-hand information (Krackov, 2009; Duff, 2013; Kayembe & Bwanga, 2020). Constructive feedback may resolve some of the challenges a struggling student may be experiencing during clinical practice.

The SOAP model (Langlois & Thach, 2000) is widely used by clinical supervisors to support struggling students during clinical practice. SOAP stands for subjective, objective, assessment, and plan. The model divides the tasks into four steps (Figure 2).
Figure 2: The SOAP model for supporting struggling students

These steps can guide clinical supervisors in managing and supporting struggling students. The steps are now discussed in relation to radiography.

**Step 1: Detecting Problems Based on a Subjective Impression**

Literature from the medical profession shows that between 10% and 15% of medical students experience significant difficulties during training (Faustinella et al., 2004; Yates & James, 2006). For this reason, various professional bodies, such as the Society of Radiographers of the UK (College of Radiographers, 2012), have emphasised the need to identify students who are either not progressing, or failing to meet the required standards, so that opportunities can be provided to improve their performance. However, identifying a student who may be struggling is a complex process. A student who is struggling has many different faces. Clinical supervisors are often best positioned to detect difficulties early, due to their privileged role of working directly with the students (Walsh, 2014). Table 1 shows the ten early warning signs of a struggling or failing student (Houghton, 2016).

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<tr>
<th>No</th>
<th>Warning sign</th>
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<tbody>
<tr>
<td>1</td>
<td>Lack of interest and motivation in applying theory into clinical practice</td>
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<td>2</td>
<td>Inconsistency in meeting required level of clinical competence</td>
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<td>3</td>
<td>Inconsistent clinical performance</td>
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<td>4</td>
<td>Lack of insight into own weaknesses regarding clinical performance</td>
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<td>5</td>
<td>Not responding appropriately to constructive feedback given by a clinical supervisor</td>
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<td>6</td>
<td>Limited practical, interpersonal and communication skills</td>
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<td>7</td>
<td>Lack of theoretical knowledge</td>
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<td>8</td>
<td>Absence of professional boundaries and behaviours</td>
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<td>9</td>
<td>Experiencing poor health (depressed, angry, or tired)</td>
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<tr>
<td>10</td>
<td>Unreliable, regularly late, or absent from the clinical learning environment</td>
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Clinical supervisors should always be aware and recognise these warning signs. However, literature suggests that early identification and intervention occur far less often than necessary. Walsh (2014) reports that many students are made aware of concerns about their performance for the first time at the end of their placement, when they have no opportunity to improve. This is viewed as morally wrong on two accounts: the clinical supervisor did not identify the deficit and did not give sufficient time or guidance to the student.

There is evidence described in the literature on missed opportunities to correct underperforming students at an early stage. Duffy (2013) reports of students feeling let down when informed of their underperformance or indeed of their failure long after an issue had been identified. One of the recurring reasons as to why clinical supervisors do not quickly identify students whose clinical performance is below expectation is due to an increase in workload (Krackov, 2009; Duff, 2013; Kayembe & Bwanga, 2020). A lack of time and...
increase in workload can lead to increased pressure on clinical supervisors and results in them prioritising their primary duties of patient care. The clinical supervisors’ recognition of a student’s difficulties should prompt the next steps of documentation, assessment and remediation rapidly, since early identification is considered the gold standard to support a struggling student (Houghton, 2016; Boileau et al., 2017).

Step 2: Gathering and Documenting Objective Data

The establishment of a diagnosis consists of identifying a discrepancy between the expected performance standard and the demonstrated performance (Bearman et al., 2013). Therefore, a clinical supervisor should consider the student’s level of training before concluding that the learner is underperforming. Data should be based on direct observation of a student to provide accurate and valuable information on which to base the support. Data can also be gathered from other clinical staff but it should be remembered that second-hand observation may lead to misunderstandings and mixed messages which can result in a defensive reaction from the student (Krackov, 2009). However, it is important to collect data on a student’s clinical performance from different clinical staff to be sure of the diagnosis. Where possible, the assigned clinical supervisor can also arrange for a feedback session with the student to gather more information or to try to resolve the problem.

Step 3: Making a Pedagogical Diagnosis Based on the Assessment

There are three causes of a student’s underperformance during clinical practice: cognitive, mental health, or attitude, amongst which cognitive difficulties are the most frequent (Smith, 2007; Walsh, 2014). These three causes are interrelated. In the radiography context, cognitive difficulties mean a lack of diagnostic imaging knowledge and clinical reasoning. Clinical supervisors should also bear in mind the possibility of other reasons for underperforming, such as undiagnosed or non-disclosed learning disability (Walsh, 2014; Houghton, 2016). To have an accurate diagnosis on the mental health of a student, the school or hospital counselling department should be involved.

Step 4: Planning a Targeted Remediation

Remediation in relation to a struggling student means additional teaching above and beyond the standard curriculum, individualised to the student who, without the additional teaching, would not achieve the necessary skills for the profession (Guerrasio et al., 2014). The first step in planning a targeted and efficient remediation is to pinpoint the underlying issue as precisely as possible (Boileau et al., 2017). It is a waste of time to start the remediation process when the problem is not well established. The designated clinical supervisor should apply the principle of individualisation in the facilitation of practice-based learning to a struggling student. Individualisation is one of the basic educational principles which relates teaching and learning to the needs of the individual student. Harden and Laidlaw (2017) report that individualised teaching improves the effectiveness and efficiency of learning and leads to better learning experiences for the students. For cognitive difficulties, a student may be supported through extra lessons in theory and clinical practice. When displaying attitude problems, a student can be supported with supplemental teachings on professionalism and supplied with a copy of the Code of Professional Conduct for Radiographers, such as the one issued by the Radiological Society of Zambia (2018). The code serves as a reference for professional ethics, morals and standards of behaviour for radiographers. For mental health issues, a student should be referred to the school’s counselling department or mental health facility.

Bullying, Harassment and Stress in the Clinical Learning Environment

Literature shows that radiography students experience bullying, harassment and stress in the radiology departments (Mason, 2006; College of Radiographers, 2010b; Turner & Ramlal, 2014; Ndahepele et al., 2018). These three issues are interrelated. According to the College of Radiographers (2010a), bullying and harassment undermine physical and mental health which results in stress.

Bullying and Harassment in the Clinical Learning Environment

A substantial proportion of students' worldwide experience bullying during clinical practice (College of Radiographers, 2010b; Blakey et al., 2019). In a survey conducted in the UK by the College of Radiographers (2010b), one third of radiography students reported being bullied during clinical practice. Blakey and others (2019) define bullying as mistreatment, either intentional or unintentional, which occurs when behaviour shows disrespect for the dignity of others and unreasonably interferes with the student’s learning process. The College of Radiographers (2010a) stresses that students should be treated fairly and consistently, and with dignity and respect, wherever they undertake clinical practice.

Literature reports that radiography students are also harassed during clinical practice (College of Radiographers, 2010b; Budden et al., 2017; Blakey et al., 2019). The College of Radiographers (2010a) defines harassment as an unwanted conduct affecting the dignity of men and women in the workplace. In the context of this article, the workplace is the radiology department. In its worst form, this is bullying and can range from physical violence to more subtle forms of psychological or sexual harassment (Walsh, 2014). Workplace harassment may be related to age, sex, race,
disability, religion, sexuality, nationality, or any other personal characteristic of the individual (College of Radiographers, 2010a).

Literature suggests that any student can suffer bullying and harassment during clinical practice and at the hands of any clinical staff (College of Radiographers, 2010a; Budden et al., 2017; Blakey et al., 2019). However, senior clinical staff are reportedly the more likely perpetrators and gender and racial discrimination are amongst the most common reported bullying and harassments acts (Budden et al., 2017; Blakey et al., 2019). A good clinical supervisor will be one the students feels they can approach if they suffer bullying and harassment (Walsh, 2014). A good clinical supervisor should also be able to identify a student being bullied or harassed. The changes in a student’s behaviour are those relating to stress (College of Radiographers, 2010a). It is good practice to orient students on how to deal with issues related to bullying and harassment during the induction process. Students can be further supported by issuing them with institutional and students’ guides. A good example is the guide issued by the College of Radiographers in the UK “Dealing with bullying and harassment- a guide for student radiographers” (College of Radiographers, 2010a). This guide can be replicated to other countries.

**Stress in the Clinical Learning Environment**

The radiology department is an important learning environment for radiography students. Students undertake training in a complex sociotechnical environment, often with critically ill patients and at risk from radiation. Students are put into a position of trust in foreign surroundings, not knowing the staff, patients, or the departmental routine (Walsh, 2014). Research on the experiences of radiography students have found the radiology department to be a source of stress during clinical practice (Mason, 2006; College of Radiographers, 2010b; Turner, 2014; Ndahepele et al., 2018). Table 1 presents the main common causes of stress amongst radiography students reported in the literature related to the clinical learning environment.

<table>
<thead>
<tr>
<th>No</th>
<th>Cause of stress</th>
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<tbody>
<tr>
<td>1</td>
<td>Bullying and harassment by clinical staff and patients</td>
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<tr>
<td>2</td>
<td>Fear of making a mistake or repeat during imaging</td>
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<tr>
<td>3</td>
<td>Feeling unprepared or inexperienced in clinical and imaging practice</td>
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<td>4</td>
<td>Difficult and critical patients, such as trauma and intensive care (ICU) patients</td>
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<tr>
<td>5</td>
<td>Excessive clinical supervision by radiographers</td>
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<tr>
<td>6</td>
<td>Negative responses to questions or requests for help from clinical supervisors</td>
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Students might also suffer from stress due to other factors not related to the clinical learning environment, such as overload with classroom assignments, or family or personal problems (Turner, 2014; Ndahepele et al., 2018).

Work-related stress is widely recognised as a significant problem in the clinical learning environment. According to the College of Radiographers (2010a) and Walsh (2014) the signs that may be indicative of stress in students include anxiety, poor performance, social isolation, poor concentration, lack of motivation, headaches, tiredness, irritability, and depression. Thus, clinical supervisors need to be alert to these signs of stress and offer the student appropriate support (Walsh, 2014). To perform this role effectively and confidently, clinical supervisors should be familiar with the support systems available. The support may include contacting academic staff and hospital counselling departments. Radiography students have also suggested strategies that can be employed to ease stress, such as frequent constructive feedback, availability of the clinical supervisors and other clinical staff, and assurances that mistakes happen in the clinical environment (Mason, 2006; Turner, 2014).

**Supporting Students with Learning Difficulties and Disabilities**

Clinical supervisors have a moral obligation to support students with health problems, learning impairments and disabilities (Kinnell & Hughes, 2010; Walsh, 2014; Royal College of Nursing, 2017). It is, therefore, important for clinical supervisors to be aware of the legislation that protects students with learning difficulties and disabilities. In Zambia, for example, the rights of students with learning disabilities are addressed through the Persons with Disabilities Act of 2012. Under this act, it is unlawful for a student to be treated less favourably because of his or her learning disability. The Persons with Disabilities Act of Zambia of 2012 defines the word “disability” as any restriction resulting from an impairment or inability to perform any activity in the manner or within the range considered normal for a human being. Walsh (2014) and the Royal College of Nursing (2017) highlights some of the more common impairments and disabilities that students may have which include: dyslexia, epilepsy, dyscalculia, hearing or visual impairment, mental health conditions and physical disability.

Generally, candidates for radiography training programmes declare their disability during the application process. Having been accepted on a training programme means that the learning disability is not a
The Royal College of Nursing (2017) stresses that impairment does not mean incapacity. With appropriate support, radiography students with learning difficulties and disabilities can work well and add value to the delivery of imaging services. Therefore, clinical supervisors have a duty to undertake an assessment to determine whether reasonable adjustments can be put in place once a disability or learning difficulty of a student is known. The purpose of reasonable adjustments is to help the student overcome the learning difficulty (University College Dublin, 2011). Failure to make reasonable adjustments is discrimination (Royal College of Nursing, 2017). However, the balance between providing reasonable adjustment for the student, whilst ensuring fitness to practice should be maintained (Walsh, 2014; Royal College of Nursing, 2017). Walsh (2014) highlight factors to consider when deciding if an adjustment is reasonable (Table 3).

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<tr>
<th>No</th>
<th>Factor</th>
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<tbody>
<tr>
<td>1</td>
<td>Need to maintain academic and practice competence standards</td>
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<tr>
<td>2</td>
<td>Financial cost of the adjustment and the resources available</td>
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<tr>
<td>3</td>
<td>Practicality of the adjustment</td>
</tr>
<tr>
<td>4</td>
<td>Effectiveness of the adjustment</td>
</tr>
<tr>
<td>5</td>
<td>Health and safety of the student, patients, fellow students, and other clinical staff</td>
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When a student with a learning difficulty or disability is on clinical practice, clinical supervisors have a duty to ensure adjustments are in place. To perform this duty effectively, clinical supervisors should understand common learning difficulties. The two most common reasons for needing additional learning support reported in the literature are dyslexia and dyscalculia (Murphy, 2011; Kinnell & Hughes, 2010; Walsh, 2014; Royal College of Nursing, 2017). These conditions and recommended reasonable adjustments are discussed in relation to radiography.

**Dyslexia:**

The British Dyslexia Association (2020) defines dyslexia as a specific learning difficulty that mainly affects the development of literacy and language skills. According to the Royal College of Nursing (2010), the incidence of dyslexia is estimated to occur in approximately 10 per cent of the population. Although dyslexia is a permanent disability, with appropriate guidance and support students may largely overcome and deal with their learning difficulties. It is, therefore, important that clinical supervisors are aware of the difficulties a student who has dyslexia may present with during clinical practice. Walsh (2014) and Royal College of Nursing (2017) list the difficulties dyslexia students may face: erratic spelling, misreading, poor handwriting, poor memory retention, difficulty in organising work, poor time management, short concentration span and confusion between right and left on the radiographs. Therefore, if a student presents with these difficulties, the clinical supervisor needs to discuss the issues with the student in a sensitive manner and inform the academic staff who have an overall responsibility for the student clinical placement. This will ensure that appropriate support is provided to the student.

There are several reasonable adjustments reported in the literature to support students with dyslexia. Kinnell and Hughes (2010) and Royal College of Nursing (2017) offer useful suggestions on how clinical supervisors can support students with dyslexia, such as going over instructions and explanations several times, allowing extra time to complete tasks, providing extra teaching and giving practical demonstrations to back up verbal explanations. According to the Royal College of Nursing (2010) people with dyslexia are caring and compassionate in nature, they are likely to be creative and good at problem solving, and they are hardworking and determined to succeed due to the challenges they face daily. It is important that clinical supervisors help students with dyslexia overcome their difficulties rather than avoid them. They can equally be encouraged to access help through the university’s academic support department or other relevant hospital departments (Walsh, 2014).

**Dyscalculia:**

Walsh (2014) defines dyscalculia as a condition that affects the ability of a person to acquire arithmetical skills. The individual may have difficulty understanding the concept of simple numbers, lack an intuitive grasp of numbers, and have problems learning number facts
and procedures. These difficulties must be quantifiably below what is expected for an individual’s chronological age and must not be caused by poor educational or by intellectual impairments (British Dyslexia Association, 2020). Dyscalculia often occurs in association with other conditions such as dyslexia, which makes it difficult to both diagnose and to estimate its prevalence, but research suggests that the condition affects about 5 per cent of the population (Royal College of Nursing, 2010; British Dyslexia Association, 2020).

This disability is a concern to clinical supervisors in radiography because it may lead to potential errors when undertaking calculations of exposure factors. This can potentially result in under or over exposure of a patient to ionising radiation.

The Royal College of Nursing (2010) and British Dyslexia Association (2020) highlight specific learning difficulties a student with dyscalculia can present with, such as difficulties when counting backwards, difficulties in remembering and dialling phone numbers, difficulties in interpreting results, problems in remembering appointment times, the need to use fingers to workout simple sums and much slower in working out mathematical answers. Although students with dyscalculia have difficulties in working with numbers and performing calculations, they excel in non-mathematical tasks, such as managing resources (Royal College of Nursing, 2010). To support these students, clinical supervisors should encourage the use of calculators for calculations and give them extra time when performing mathematical clinical tasks.

CONCLUSION

There is a scarcity of literature in radiography on supporting students with learning difficulties and disabilities during their clinical practice. This article provides this information to radiographers who supervise radiography students in the clinical learning environment by borrowing the literature from the nursing and medical professions. Literature searches also revealed a lack of guidelines on this subject in radiography. There is a necessity to develop guidelines by the schools of radiography and professional bodies representing radiographers in each country, such as the Radiological Society of Zambia (RSZ) to support radiography students and their clinical supervisors. There is also a lack of research on this subject; radiographers and radiography students are encouraged to conduct research on this topic to have an understanding related to the radiography profession.

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REFERENCES