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Radiography students' experiences of practical evaluations at University of Namibia

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ABSTRACT

Background. Student progress in the acquisition of clinical competences during clinical placements is checked using a variety of assessments. Evaluating students in a clinical setting is an indispensable portion of the overall learning progression. Such evaluations provide students with objective updates on their progression. When multiple evaluators assess students, it raises the issue of interrater reliability where different personalities interpret evaluation criteria differently, and have different expectations of students' clinical performance. Radiography students at the University of Namibia (UNAM) are assessed by different assessors. This could create irregularities and inconsistency in grading and could lead to failure.

Objective. To explore the experiences of UNAM radiography students regarding practical evaluations.

Methods. A qualitative, exploratory, descriptive research design was utilised. The sample consisted of first, second, and third year radiography students at UNAM. Three focused group discussions were conducted for data collection.

Findings. Three themes and 10 sub-themes were identified. The three themes were: participants experienced operational challenges during practical evaluations; participants experienced unprofessionalism among clinical instructors; and participants experienced positive experience during practical evaluations.

Conclusion. The participants experienced a number of challenges, which affected their performance, during their practical evaluations. Unprofessional behaviour by evaluators was one of the common experiences of the participants resulting in reduced objectivity of their evaluations. Nevertheless, the results show that there were some positive experiences from the evaluation exercise as participants could learn and improved their skills in line with their performance. Based on the findings it is recommended that proper planning and standardisation of practical evaluations should be implemented to improve their objectivity.

Keywords clinical competence, radiography, Tesch.

LAY ABSTRACT

Student radiographers were asked to share their experiences of undergoing assessments when x-raying patients. They identified positive aspects and challenges that they experienced during assessments.

INTRODUCTION

Since the discovery of x-rays in 1895, radiography has evolved and is an integral part of medical diagnosis, with new applications emanating daily. Today diagnostic radiography is an essential component of the entire healthcare continuum, from wellness and screening, to early diagnosis, treatment selection, and follow-up. Patient prioritisation in both acute care and chronic disease, imaging-guided interventions, and optimisation of treatment planning are now integrated into routine clinical practice in all subspecialties.^[1] Radiography, like any other health profession, is regulated by health councils whose mandate is to ensure that the graduates can meet the minimum competences for safe practice. To ensure this is comprehensively achieved, the training programmes

include theory and clinical components. It is an expectation placed on students who study for qualifications, which enable them to register as health care professionals, to carry out a large amount of clinical placement to support their learning.^[2] In particular, clinical placement provides an integral experience for students to apply, develop, and extend their knowledge and skills from their classroom experiences, into practical settings.^[3]

Student progress in the acquisition of clinical competences during clinical placements is checked using a variety of assessments. According to Lee^[3] assessments are only one portion of the measurement of learning progression for students. Clinical instructors must evaluate students throughout their clinical practice and provide constructive feedback.

Evaluating students in a clinical setting is an indispensable portion of the overall learning progression; such evaluations provide students with objective updates on their progression. For clinical evaluations to be objective and effective, clinical instructors or evaluators must set aside any prior personal feelings and perceptions regarding the students and be as independent as possible.^[4] Feedback, which is data about the comparison between a student's actual performance and a predetermined performance standard, must then be presented to the student with the intention to advance the student's abilities.^[5] Student radiographers need to be assessed in many different areas, including interpersonal skills, professional attitude and responsibility, organisational skills, practical skills and occupational health and safety.^[6] Clinical students are expected to

exhibit competency in patient care, medical knowledge, professionalism, systems-based practice, practice-based learning and improvement, and interpersonal and communication skills.^[7]

The problems of assessment reliability with multiple evaluators have been described in the literature.^[8] Many of the clinical placement sites that accept students have multiple staff who conduct clinical assessments; several radiographers are involved in the process. This raises the issue of interrater reliability where different personalities interpret evaluation criteria differently, and have different expectations of students' clinical performance.

A four-year bachelor of radiography degree is offered by the University of Namibia (UNAM). Undergraduate students attend classroom-based theory lectures that focus on specific radiography modules. The latter are complemented by clinical practice at state and private hospitals where the students obtain work experience and gain the confidence and competences required upon graduation.^[9] For clinical progression to occur, first to third year students are subjected to, and, expected to pass practical evaluations on various projections performed on patients. These practical evaluations are conducted by UNAM lecturers and clinical instructors. A practical evaluation is valid and reliable to assess students' practical competence in providing quality services while performing skills and procedures on a diverse patient population in a relatively short period of time.^[10] However, Kilgour^[6] reiterated that different clinical supervisors and assessors interpret assessment criteria differently, and their expectations of students' clinical performance are different. At UNAM, radiography students are assessed by different assessors. This may create irregularities and inconsistency in grading and may lead to failure. UNAM radiography students' experiences during practical evaluations remain unknown, thus it is essential to gain insight into their experiences. The aim of this study was to explore the experiences of UNAM radiography students regarding practical evaluations.

RESEARCH ETHICS

Permission to conduct the study was granted by UNAM's School of Nursing ethics

committee. Informed consent was obtained from the participants. Their participation in the research study was voluntary without any risk of penalty or prejudicial treatment. The research questions were fair. Personal and harmful questions were not asked. All participants were treated as fairly and equally as possible. They were given enough time to participate without discrimination.

MATERIALS AND METHODS

A qualitative, explorative and descriptive research design was used. The qualitative approach provided the researchers to gain insight into human experiences from the viewpoint of the participants in the context in which practical evaluations take place.^[11] The explorative and descriptive design enabled the researchers to bring light to a phenomenon previously unknown through describing the participants' experiences. Data were collected from first to third year radiography students at UNAM main campus, using three focus group discussions (FGDs) for each year's group. Convenience sampling was used to select 18 participants: n=6 in each FGD. To minimise the effect of power relations, a trained student led the FGDs and this allowed students to speak openly and freely among their peers.

A pilot study was conducted on four second year students who did not participate in the FGDs. Their responses were thus excluded from analysis in the study.

DATA COLLECTION

Data were collected from August to September 2019 in a classroom at one of the state hospitals during student clinical placement blocks. Consent to participate in the study and to be recorded was given by the participants before commencement of the FGDs. Participants were made comfortable and relaxed with ice-breaker questions before the study questions. A semi-structured interview guide was used. It consisted of one central and two follow-up questions as indicated below. In addition, probing questions were asked during the course of the FGDs.

The central question was as follows. What is your experiences regarding the conduction of practical evaluation? The other two questions are presented below.

- From your past experiences, if you

have an opportunity to change how practical evaluations are done, what would your recommendations be?

- Do you have any additions, comments, and suggestions regarding practical evaluations?

DATA ANALYSIS

The participants gave their reflections based on questions developed by the researchers to ensure content validity. Participants' responses and field notes were recorded during the FGDs, until data was saturated. The researchers compared their notes with the voice recordings and replayed the voice recordings to the participants to ensure that they agreed with the content thereby enhancing dependability and credibility. Data were transcribed, coded and then themes and sub-themes were generated using Tesch's 8 steps^[12] as shown in Table 1.

Themes and sub-themes were compared by the researchers and clarified until consensus was reached. Credibility was enhanced by prolonged engagement and member checking. Transferability and dependability were ensured through thick methodological description and audit trails. Conformability was ensured through reflexivity that limited researchers' biases, motivations, and perspectives.

RESULTS

Three themes and 10 sub-themes were identified as shown in Table 2.

THEME 1: participants experienced challenges during practical evaluation

Challenges refer to something which is new and difficult and requires great effort determination.^[13] In this study, participants experienced challenges during practical evaluations: malfunctioning of x-ray machines, language barrier, rarely performed x-ray procedure, hand writing of doctors, and anxiety. These are presented below.

Sub-theme 1.1: malfunctioning of X-ray machines

The participants experienced malfunctioning of some of the machines, including mobile units, and this was a challenge during their respective practical evaluations.

Examples of the participants' verbatim comments are presented in italics.

Table 1. Summary of data analysis

TESCH'S STEPS OF DATA ANALYSIS	APPLICATION TO THE STUDY
Step 1	All the transcripts were read in order to extract the meaning from the FGDs.
Step 2	Interesting transcript was read to identify main topics from the FGDs.
Step 3	Descriptive wording was used to label the main and subtopics for noting of these topics in the transcripts. Similar topics were grouped together and labelled under major topics, unique topics, and additional topics.
Step 4	Codes were allocated to the topics, simply by abbreviating them.
Step 5	Related topics were grouped together into meaningful categories by means of a coding system.
Step 6	Names for the categories or themes were identified with the aim of organising the coded data into meaningful phenomena.
Step 7	Data that belonged to the same category was listed to prepare the data for analysis.
Step 8	The data were analysed according to the identified themes and subthemes.

... I suggest that they should do maintenance on the mobile machines before, before starting our evaluation part, becoz now you go there and the tube doesn't want to lock or it's giving an error and you're marked down, P#3 FGD 2

...I feel like people, they don't need to use ..., room three for evaluations becoz those collimations are not working well so... you might cut just because of collimation but not because of your technique. P#1 FGD 2

Sub-theme 1.2: language barrier

Language barriers often go hand-in-hand with cultural differences, posing additional problems and misunderstandings in the workplace which can impact on work performance.^[14] In this study, participants experienced language barrier as a challenge during practical evaluations as highlighted by the following comments.

... Students that get patients ... that speak a different language like sometimes like some of us we are Vamboes and you get a patient that speaks only Afrikaans, ... or even a foreign language, which is just going to be so hard, ... and then they're going to talk about communication, you didn't communicate with your patient but there's nothing you can do, P#2 FGD 1

... during evaluation umm the instructor will be like, there was not enough communication with your patient, the ... communication was not professional enough but, at some

points there's nothing you can do, they don't understand all the sign language also, mmh. P#2 FGD 1

Sub-theme 1.3: rarely performed x-ray procedure

These are special radiographic examinations performed by radiographers and students in a clinical setting. The participants stated that some projections were not routine in their clinical settings. They experienced difficulties finding patients that required some recommended practical evaluation projections. For example, C-spine open mouth, and horizontal beam lateral hip. The participants said they lacked confidence and competence when they had to perform these examinations during practical evaluations. They also added that they only performed additional projections for their first time during practical evaluations since the hospitals' protocols state the general projections to be performed. The following were the responses by some participants.

..., my experience with evaluations ahhh some examinations ... some evaluations are, were pretty good, but as time went as time go they became so hard like hip laterals and all shoot-throughs, in the department we don't ... we rarely do those but like they expect us to do it like perfectly and all that but, its like we don't really do those things in the department ... P#2 FGD 2

I suggest that they do away like they take away that evaluation, they shouldn't do the evaluation for

Mammo because, when we go to private, am talking about like the guys, when they go there, they are not allowed to observe the patients because apparently it has to do with privacy, ... so I think they should just do away with that. P#5 FGD 2

Sub-theme 1.4: doctors' hand writing and incomplete x-ray request form

Illegible handwriting can delay treatment and lead to unnecessary tests and inappropriate doses, which may in turn result in discomfort and death.^[15] The participants stated that they struggled to read some doctors' handwriting on the x-ray request forms. It is protocol for radiographers and students to have an understanding of a patient's history, the examination in question and other significant details on the request form before commencing with a procedure.

... some of ... those hand writings on the request form they're not clear and last time I was asked if we are doing examination blind, like I couldn't see what was written there, but I ... didn't know if its my fault that I couldn't see P# 1 FGD 2

They also mentioned that some patients presented request forms that lacked significant information.

Yeah, and even sometimes they ask you like about the request form, the request form is not completed correctly, some patients come from the regions and the request form is not properly completed and then I must

Table 2. Themes and sub-themes of participants' experiences

THEMES	SUB-THEMES
Theme 1 Participants experienced operational challenges during practical evaluation	1.1 Sub-theme: malfunctioning of X-ray machines 1.2 Sub-theme: language barrier 1.3 Sub-theme: rarely performed x-ray procedure 1.4 Sub-theme: doctors' hand writing and incomplete x-ray request form 1.5 Sub-theme: anxiety
Theme 2 Participants experienced unprofessionalism among clinical instructors	2.1 Sub-theme: attention to cellphones instead of professional matters 2.2 Sub-theme: schedule consistence 2.3 Sub-theme: inconsistent practical evaluation
Theme 3 Positive experience	3.1 Sub-theme: learning and improvement opportunity 3.2 Sub-theme: supportive clinical instructors

now understand but that's how the patient came. P#4 FGD2

Sub-theme 1.5: anxiety

Anxiety, according to the Oxford Dictionary,^[13] is a general term for several disorders that cause nervousness, fear, apprehension and worrying. Anxiety affects how people feel and behave; it can manifest real physical symptoms such as shivering. First year students were scared of making mistakes and were unsure of the appropriate practice and they did not know how to manage different patient conditions. Examples of anxiety are evident in the following comments.

Okay, so, I just feel like umm okay, the way it's being done it makes us very nervous and very anxious sometimes to a point where ... we do unnecessary mistakes because we are very nervous and we're scared P#7 FGD1

... when you're first year, you're not really used to the clinical instructors and all that, you get to be so nervous, you're scared of the person and all that but as time goes on you get that confidence around the clinical instructor you get to do your things right and all that. Yeah. P#5 FGD2

THEME 2: participants experienced unprofessionalism among clinical instructors

Professionalism relates to being punctual and demonstrating accountability and responsibility.^[16] Some participants expressed negative experiences in terms of the professional behaviour exhibited by

a clinical instructor; procrastination and cellphone usage during practical evaluations, for example.

Sub-theme 2.1: attention to cellphones instead of professional matters

The use of cellphones by any healthcare provider for personal matters when on duty is unprofessional behaviour especially as such an action may interrupt the concentration of others in close proximity and may result in poor service delivery. The participants complained that clinical instructors used their cellphones during practical evaluations and this in turn was a distraction as it reduced their paying attention to students' practice.

Uhh ... cell phones there during evaluations, either a student or clinical instructor should not use their cell phones becoz I can't be telling a person like my patient left the old x-rays at home, my instructor is in the phone and at the end of the day you ticked I didn't consider old x-rays, cell phone should not be used. P#5 FGD 1

Another participant complained that it is unprofessional for a clinical instructor to use a cellphone during a practical evaluation. A clinical instructor is supposed to attentively observe every part of a student's practice.

Okay, I feel the way we conduct it is also unprofessional, umm, we are not allowed to use phones at clinical practice, but then now when they conduct the evaluations, you find now the evaluator is on their phone and then later on when you're done

that's when they ask some of the things. sometimes they're really being unprofessional, if they can just keep their phones away from the evaluation procedure, I feel it will help. P#3 FDG 2

Sub-theme 2.2: schedule consistence

The participants verbalised deficits in terms of communication and consideration between a clinical instructor and student regarding evaluation schedules and set times. These related to incidences where supervisors arrived late for scheduled practical evaluation or cancelled evaluations.

... I think the instructor should just, should have a specific time on when to do the ... evaluation, okay I know there's a specific day like from what to what but sometimes you know you are at the hospital and then the umm the instructor is not there and you were supposed to do evaluation, P#2 FGD 1

... I know it's difficult but put a list, one, two, three whatever, whoever goes first should follow the list, now some of the student that's in the beginning of the list is not there so I feel like the evaluator should do them according to the list P#3 FGD 3

Sub-theme 2.3: inconsistent practical evaluation

The participants mentioned that clinical instructors evaluated students differently. They complained that different lecturers had different expectations and ways of asking questions.

I feel like uhh ... practical evaluation be done by one lecturer becoz different lecturers have different ways of doing it, some lecturer doesn't ask you questions, another lecturer asks the other student questions, so it's better if one lecturer just does the whole practical evaluation, is much more fairer than that way. P#6 FGD 1

I think they-they can also be more consistent with how they conduct the evaluation because uh on many occasions several students tend to have different experiences, even whether we're evaluated by one person or two different people, this one might've been nice to you on certain issue but to the other penalize you, P#6 FGD 3

THEME 3: positive experience

Positive experience is defined as enjoyable, satisfying and fun feelings.^[16] Positive experiences of the participants included learning, improvement opportunities, and a supportive clinical instructor during practical evaluations.

Sub-theme 3.1: learning and improvement opportunity

Participants acknowledged that clinical practice provided an opportunity for them to learn; especially what they were not taught in class, and to practice what they had learned. Learning opportunities are key to ensuring that you retain new knowledge and skills and apply them when you get back to work or tell others about it. They did state that they experienced learning and improvement opportunities.

... I actually enjoyed it, that it made me see where do I stand as a radiography student, to see my competence and my confidence so it made me realize what I need to improve on and moving and yeah so, yes it made me become strong ... P#3 FGD 1

For me uhh not knowing what to expect actually made uhh made a positive impact of me cos uhh now whenever I take an image I can- I can start evaluating it, yes, and I don't- I don't expect to be asked a-anymore, yes. P#5 FGD3

Sub-theme 3.2: supportive clinical instructor

The participants stated that some clinical

instructors were very nice during practical evaluations because they gave students time to prepare for the evaluations and they readily answered students' questions. This is evident in the following quotations.

Umm a good experience is that the clinical instructor is always open for questions like if you have a question, you can go and ask, if you're unsure of something she will always help you, that was nice. P#2 FGD3

Umm I feel like it's fine I guess because... yeah but I feel like it's just fine because when it's time like when you get your patient to do she won't really say come and do, she will tell you uhm when you are ready let me know so you'll have time to at least prepare. P#4 FGD1

DISCUSSION

The main challenges in the findings pertained to operational factors and unprofessionalism.

• Operational challenges

The participants experienced challenges during their practical evaluations: malfunctioning x-ray machines, language barrier, doctors' handwriting and rarely performed x-ray procedures, for example. Adams and Rother^[17] reported that language barrier in South Africa compromises patient quality of care from nurses; patients who cannot communicate with healthcare providers are less likely to adhere to treatment. These challenges influenced healthcare delivery, healthcare providers' motivation and job satisfaction. In the same light, the quality of objective assessments may be affected where a language barrier exists either between an evaluator and student or student and patient. Information may be wrongly understood resulting in poor compliance to instructions and directives.

Experience of anxiety among participants was mentioned as causing fear, discomfort and making students nervous. These study findings are in line with a study conducted by Leeuwen, Oosterhuis and Ruyter^[18] regarding anxiety and categorisation effects on student nurses' attitudes towards young and older patients: a dual pathway model also revealed that anxiety is harmful to some students; it is associated with high levels of worry that can affect perfor-

mance. The findings of the current study indicate that students were not used to working with clinical instructors, hence they found themselves uncomfortable when being evaluated by them. Students' learning is also dependent on sufficient time spent between a student and supervisor through face-to-face meetings on a regular basis.^[19] This calms a student during evaluations and reduces panic attacks: the latter result in errors and poor performance.

• Unprofessionalism

The findings indicated that the students' performance was affected negatively by clinical instructors who did not focus and pay attention during practical evaluations. The participants highlighted that sometimes students score poorly due to deductions made by clinical instructors who sometimes spent time on their cellphones and thus did not fully observe a student's performance. Donough and Heever^[16] concluded in their study that cellphone usage during assessments is very distracting and unprofessional; it can affect both an evaluator and student regardless of who used the cellphone. Ahannonu and Waggie^[20] stated that role-modelling is a technique that allows students to acquire new behaviours by imitating professional behaviour; it is therefore important that clinical instructors serve as role-models of professionalism for students.

The study findings revealed that students were not prepared for a practical evaluation that occurs suddenly without them being informed. This is due to postponements, delays of scheduled practical evaluations and poor communication between clinical instructors and students. It is imperative that clinical evaluations are timeously scheduled to enable students to prepare and familiarise themselves with the settings. Unplanned evaluations may limit objectivity of such assessments.

Clinical instructors and evaluators were also reported to have different expectations during practical evaluations; this causes inconsistency in practical evaluations of students. A 2014 study^[8] revealed that different personalities interpret evaluation criteria differently, and have different expectations of students' clinical performance. According to the literature it important that all students are assessed in the same way using the same methods,

against the same standards.^[21] Muthathi and co-workers^[22] stated that other best practices regarding clinical supervision include consistency in performing procedures; incongruence amongst clinical instructors pertaining to the execution of clinical procedures was contradictory to best practices. In addition, they further advised that demonstration of procedures to students must be standardised.

Although the finer detail of the procedures carried out by clinical instructors may differ, all clinical instructors and lecturers should use the same guidelines for clinical demonstrations and assessments of students.

• Positive experiences

Participants did report a few positive experiences during their practical evaluation. They indicated that a practical evaluation is an opportunity for students to measure their level of competence, to gain confidence and improve their practical technique when carrying out a procedure. In other words, it is important that students be given feedback after their practical evaluation is completed; in terms of those who performed well and those that need improvement. Plakht et al^[23] stated that in order to convey evaluation results to students, feedback from an evaluator to a student is critical in the learning process; students can use feedback from the evaluations to understand areas in which they need to improve and to master skills performance. The findings further showed that students learned to be independent and have confidence in their practice without relying on radiographers or clinical instructors for guidance.

Some participants were grateful for informative and kind-hearted clinical instructors who were willing to prepare them emotionally for their practical evaluation. Participants stated that some clinical instructors did give students enough time to prepare and did give them chances to ask questions in case they were not sure of something. Effective clinical instructor skills include more than just teaching and evaluation; they also include adjusting to the environment, acquaintance with academia, and becoming a liaison between the programme and the clinical facility.^[24]

RECOMMENDATIONS

From the study findings the following are recommended.

- Each clinical evaluation should be planned in advance and all necessary equipment and accessories should be made available to enable an objective assessment and to improve students' experiences.
- All clinical evaluations should be standardised across different evaluators; subjective bias should be minimised to ensure consistency for all evaluations.
- Student numbers must be reduced in line with the capacity of the department so that all students can be evaluated on time during the scheduled dates.
- Further research on the effectiveness of clinical instructions and supervision among UNAM radiography students may help to understand the performance of students during clinical evaluations.

LIMITATIONS

The population of this study was small and limited to the students enrolled at UNAM, thus applicability of results in other contexts may be limited.

CONCLUSION

This study explored and described the experience of radiography student during practical evaluations at a state training hospital in Windhoek. The findings indicated that participants had both negative and positive experiences. The participants experienced a number of challenges during their practical evaluations and these affected their performance. Unprofessional behaviour by evaluators was also one of the common experiences by the participants resulting in reduced objectivity of their evaluations. Nevertheless, the results showed that there were some positive experiences from the evaluation exercise; participants learned and improved their skills in line with their performance.

AUTHORS' CONTRIBUTIONS

EH conceptualised the study, did literature review, collected and analysed data. MA supervised the study, did literature review, analysed data, prepare the manuscript. AK did literature review, analysed data, and prepared the manuscript. AK and MA finalised the manuscript and guarantee the integrity of the study.

CONFLICT OF INTEREST

Authors declare no conflict of interest.

REFERENCES

1. Bercovich E, Javitt M. Medical imaging: from Roentgen to the digital revolution, and beyond. *Rambam Maimonides Med*, 2018; 9(4): 1-11
2. Hyde E. A critical evaluation of student radiographers' experience of the transition from the classroom to their first clinical placement. *International Journal of Radiography Imaging & Radiation Therapy*, 2015; 21(3): 213-296.
3. Lee C. Radiography clinical instructors' perceptions of the transition from technologist to educator. East Tennessee State University, unpublished thesis. [Cited 2019 September 17]. Available from <https://dc.etsu.edu/cgi/viewcontent.cgi?article=3971&context=etd>
4. Giberson T, Black B, Pinkerton E. The impact of student-clinical instructor fit and student-organization fit on physical therapist clinical education experience outcomes. *Journal of Physical Therapy Education*, 2008; 22(1): 59-64.
5. Van de Ridder J, Stokking K, McGaghie W, ten Cate O. What is feedback in clinical education? *Medical Education*, 2008; 42(2): 189-197.
6. Kilgour A. Assessment of competency in radiography students: a new approach. *Radiographer*. 2011; 58(3): 32-37
7. Anthony U, Thomas A, Bobuin N, Kingsley O. Patients' awareness and perception of diagnostic clinical radiography students' involvement in routine radiographic examinations at a university teaching hospital. *Traditional Medicine and Biotechnology*, 2015; 3(3): 8-12.
8. Moffett D, Reid B, College K. The elusive nature of reliability: problems and pitfalls in scoring clinical practice action research projects. Savannah: Georgia, 2014.
9. Mohiy H, Salowa H, Tedla J et al. Radiography students' satisfaction during their practical and clinical training session at King Khalid University, Saudi Arabia: a cross sectional study. *Biomedical Research*, 2016; 27(4). [Cited 2019 September 17]. Available from <https://www.alliedacademies.org/articles/radiography-students-satisfaction-during-their-practical-and-clinical-training-sessions-at-king-khalid-university-saudi-arabia-a-c.html>
10. Abrahams I, Reiss M. The assessment of practical skills. *The School Science Review*, 2015; 96(357): 40-44
11. Brink W, Ransburg V. *Fundamentals of*

- research methodology for health professionals. Carol Balchin: Cape Town, 2012.
12. Tesch R. Qualitative research: analysis types and software tools. New York: Falmer, 1992.
 13. Oxford advanced learner's dictionary of current English. 9th ed. Oxford: OUP, 2014.
 14. Ramlan S, Abashah A, Abu S, Irza H, Abd R et al. The impact of language barrier and communication style in organizational culture on expatriate's working performance. *Management Science Letters*, 2018; 8: 659-666.
 15. Sokol D, Hettige S. Poor handwriting remains a significant problem in medicine. *Journal of the Royal Society of Medicine*, 2007; 99(12): 645-6
 16. Donough B, Van der Heever M. Undergraduate nursing students' experience of clinical supervision. *Curationis* [online], 2018; 41 (1): 1-8. [Cited 2019 September 17]. Available from: <http://www.scielo.org.za/pdf/cura/v41n1/24.pdf>
 17. Hunter-Adams J, Rother HA. A qualitative study of language barriers between South African healthcare providers and cross-border migrants. *BMC Health Services Research*, 2017; 17(97). [Cited 2019 September 17]. Available from <https://bmchealthservres.biomedcentral.com/track/pdf/10.1186/s12913-017-2042-5>
 18. Leeuwen E, Osterhuis M, Ruyter S. Anxiety and categorisation effects in student nurses' attitudes towards young and older patients: A dual pathway model. University of Leiden, Netherlands, 2016.
 19. University of South Africa Excellence in teaching, research and engagement, 2012. [Cited 2019 September 17]. Available from <http://www.unisa.ac.za>
 20. Ahannonu L, Waggie F. Expectations of youth victims of violence regarding health care professionals leading them to wellness in South Africa. *Curationis*, 2015; 38(2):1547. doi: 10.4102/curationis.v38i2.1547.
 21. Sadler DR. Grade integrity and the representation of academic achievement: studies in higher education, 2013; 34 (7): 807-26.
 22. Muthathi SI, Thurling HC, Armstrong JS. Through the eyes of the student: best practices in clinical facilitation. *Curationis*, 2017;40 (1): e1-e8. doi: 10.4102/curationis.v40i1.1787.
 23. Plakht Y, Shiyovich A, Nusbaum L, Raizer H. The association of positive and negative feedback with clinical performance, self-evaluation and practice contribution of nursing students. *Nurse Education Today*, 2013; 33(10): 1264-8.
 24. O'Conner A. Clinical instruction and evaluation: a teaching resource. 3rd ed. Burlington, MA: Jones and Bartlett Learning, 2015.