Journal of Medical Imaging and Radiation Sciences 54 (2023) 16–22

Journal of Medical Imaging and Radiation Sciences

Journal de l'imagerie médicale et des sciences de la radiation

www.elsevier.com/locate/jmir

Educational Perspective

An educator's reflections on service learning as an approach to produce socially responsive medical imaging and therapeutic sciences graduates

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ABSTRACT

Introduction: Producing socially responsive graduates is a challenge within the undergraduate training of healthcare professionals. The role of the educator is to prepare the students for work in various community settings. An approach through which this can be done, is known as service learning (SL). SL allows students an opportunity to apply their newly gained knowledge to real-life projects.

Aim: To reflect on how social responsiveness can be instilled within a South African medical imaging and therapeutic sciences curriculum.

Method and discussion: The Gibbs' Reflective Cycle was utilised to draw on and describe the educator's experience as a facilitator of SL. A conceptual model was developed, depicting the different phases that the educator embarks on whilst facilitating a SL community project. The reflections presented in this paper is based on the educator's own experience. No primary data is presented.

Conclusion and recommendations: As an educator and facilitator of SL, I have learnt that it is critical to adopt a hands-on approach whereby you have to step in and support/ motivate the students on a regular basis. Graduates can use this experience to improve their patient care practices within the clinical environment. The need to explore the students' perspectives on the conceptual model and their overall SL experience is deemed necessary to enhance the facilitation of future projects.

RÉSUMÉ

Introduction: Produire des diplômés socialement réactifs est un défi dans le cadre de la formation de premier cycle des professionnels de la santé. Le rôle de l'éducateur est de préparer les étudiants à travailler dans divers environnements communautaires. Une approche permettant d'y parvenir est connue sous le nom d'apprentissage par le service (AS). L'apprentissage par le service donne aux étudiants l'occasion d'appliquer leurs connaissances nouvellement acquises à des projets de la vie réelle.

Objectif: réfléchir à la manière dont la réactivité sociale peut être instillée dans un programme sud-africain d'imagerie médicale et de sciences thérapeutiques.

Méthodologie et discussion: Le cycle de réflexion de Gibbs a été utilisé pour s'inspirer de l'expérience de l'éducateur en tant que facilitateur de la LS et la décrire. Un modèle conceptuel a été développé, décrivant les différentes phases dans lesquelles l'éducateur s'engage lorsqu'il facilite un projet communautaire d'AS. Les réflexions présentées dans cet article sont basées sur la propre expérience de l'éducateur. Aucune donnée primaire n'est présentée.

Conclusion et recommandations: En tant qu'éducateur et animateur d'AS, j'ai appris qu'il est essentiel d'adopter une approche pratique dans laquelle vous devez intervenir et soutenir/motiver les

Contributors: The author of this paper was solely involved with the development and description of the conceptual model. By having utilised the Gibbs' Reflective Cycle, the author reflected on his own experience as a facilitator of SL.

Funding: The author did not receive any funding for writing this paper.

Competing interests: The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Ethical approval: No ethical clearance was sought for publishing this paper as the content is based purely on the author's interpretation and reflections as an educator and facilitator of SL. No students have been consulted and no primary data were collected or presented in this paper. Permission to publish this paper was obtained from the university's Research Integrity Unit. Permission was also obtained from Professor Graham Gibbs, to visually reproduce and include his reflective cycle in this paper.

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https://doi.org/10.1016/j.jmir.2022.10.197

étudiants demanière régulière. Les diplômés peuvent utiliser cette expérience pour améliorer leurs pratiques de soins aux patients dans l'environnement clinique. La nécessité d'explorer le point de vue des étudiants sur le modèle conceptuel et leur expérience globale en matière d'AS est jugée nécessaire pour améliorer la facilitation de projets futurs.

Keywords: Service learning; Community project; Health professions education; Social responsiveness

Introduction

Producing socially responsive graduates is a challenge within the undergraduate training of healthcare professionals and is considered a necessity in health professions education (HPE) [1,2]. A socially responsive healthcare professional is not only seen as being a clinically competent practitioner, but also as an individual who is able to function optimally within a broad range of social contexts [2]. They are aware of the social challenges in their communities and strive towards creating a better, meaningful environment for themselves and those around them [2,3]. Hudson et al. [2] is of the opinion that programmes within the HPE domain must be designed to enable students with a better understanding and awareness of the social environments in which their patients find themselves in. Furthermore, the same authors recommend that educators need to constantly reflect on their pedagogic practices.

A challenge with producing socially responsive graduates may be coupled with the limitations posed by traditional classroom-based teaching and learning. In an attempt to bridge this gap, an educational concept known as service learning (SL) was introduced [4]. SL caters for a connection between the theoretical content that is taught in the classroom, with that of real-life applications [5].

Pacho [4] reports that many higher education institutions (HEIs) started with this initiative from as early as 1984. SL allows students with an opportunity to apply their newly acquired theoretical knowledge by participating in real-life projects. This is done by delivering a service to the members of their community in the form of a SL community project (SLCP). Whilst it is cited in literature that SL can improve learning [6], it is important to acknowledge that the context of each SLCP is different.

As a point of reference for this paper, SL will be explored within a South African medical imaging and therapeutic sciences' curriculum from an educator's perspective. The curriculum forms part of the students' undergraduate training. The SL component is embedded in a third-year management subject, and rooted within four unique, professional Bachelor of Science Degrees (Diagnostic Radiography, Diagnostic Ultrasound, Nuclear Medicine Technology and Radiation Therapy). These qualifications are offered over a four-year period. The project runs over a full academic year and is based on the theoretical framework of the planning function in the management cycle [7]. The project also forms part of the students' work-integrated-learning curriculum component. The learning outcomes of the SLCP are therefore aligned with the application of the theoretical concepts associated with the planning function and as mentioned, it is also used as an approach to produce socially responsive graduates.

Various stakeholders are involved in this project, including: 1) a group of approximately ten students, 2) a community partner, 3) a service provider, 4) a potential sponsor/ sponsors and 5) the HEI. Before the SLCP is implemented, a Memorandum of Understanding (MoU) is signed by all stakeholders to approve the proposed project plan as developed by the students. Following the completion of the project, students are given an opportunity to reflect on their individual experiences. This creates a space for them to comment on their understanding of the knowledge gained and creates a notion of their civic responsibility as aspiring healthcare professionals [8].

The overarching question that will be addressed in this paper is: How can social responsiveness be instilled within a South African medical imaging and therapeutic sciences curriculum? The answer to this question will be explored by means of an educator reflecting on his personal experience as a facilitator of SL.

The South African context

The South African population is culturally diverse, with its own unique customs, traditions and languages. South Africa is also considered a developing country facing many socio-economic challenges. One of the biggest challenges is poverty [9]. It was reported that approximately 25% of South Africans are living below the poverty line [10]. Interventions put in place by the government, however, were deemed unsuccessful and because of this, various HEIs located in the country recognised and included SL within their undergraduate curricula [10]. Professionals registered in the field of medical imaging and therapeutic sciences offer services to a variety of patients and from all walks of life [2]. Therefore, and in the context of this paper, it is critical that these students be exposed to and be aware of their patients' different social contexts prior to them graduating [2].

Interactions between the students and the community members provide students with an opportunity to experience the social environment of their patients. This is important as the students are able to comprehend, through personal experience, the sociological challenges and patterns related to health and disease in the various communities. This, in return, serves as a guide for new graduates interacting with their patients. In other words, and in my opinion, after completing a SLCP, students are able to deliver improved patient-centred care practices to

Fig 1. The Gibbs' Reflective Cycle [11].

those referred for medical imaging examinations and radiation treatment.

Method and discussion

The Gibbs' Reflective Cycle was utilised to draw on and describe my experience as an educator and facilitator of SL. The Gibb's Reflective Cycle was originally developed to support those involved with experiential learning and is thus in keeping with the context of this paper. It can be used for a continuous and/ or a once-off experience, and as a cycle of improvement. Fig. 1 represents the six steps identified by Professor Graham Gibbs when reflecting on an experience [11].

1. Description

I developed a conceptual model after having facilitated eight unique SLCPs. The model depicts the different phases that I embark on as an educator when facilitating a SLCP. The phases are presented in a series of five chronological phases (Fig. 2). The conceptual model was informed by 1) the theoretical framework previously identified (the concepts associated with the planning function in the management cycle) and 2) myself having applied deductive-, inductive- and retroductive reasoning. Similar projects have been facilitated at the university where I teach, however, there is no evidence of a conceptual model in the current curriculum.

Phase 1: Investigate

Phase one is the very first step of the SL journey and it is also the most critical. At this point, the students have already attended a formal lecture pertaining to SL as well as a formal lecture on the planning function associated with the management cycle.

During this phase, an investigation process is followed, consisting of two steps. During step one, the students are instructed to identify a community partner for their projects. The way in which I facilitate this, is by commencing with an individual homework page. Each student is instructed to go and research potential, needy communities that are of interest to them. Examples of community partners may include safety homes, shelters, rehabilitation centres, hospices and more. These examples are in keeping with the patient profile serviced by medical imaging and therapeutic sciences' healthcare workers on a daily basis.

Following this, groups of approximately ten students are created by myself. The groups of students are instructed to choose

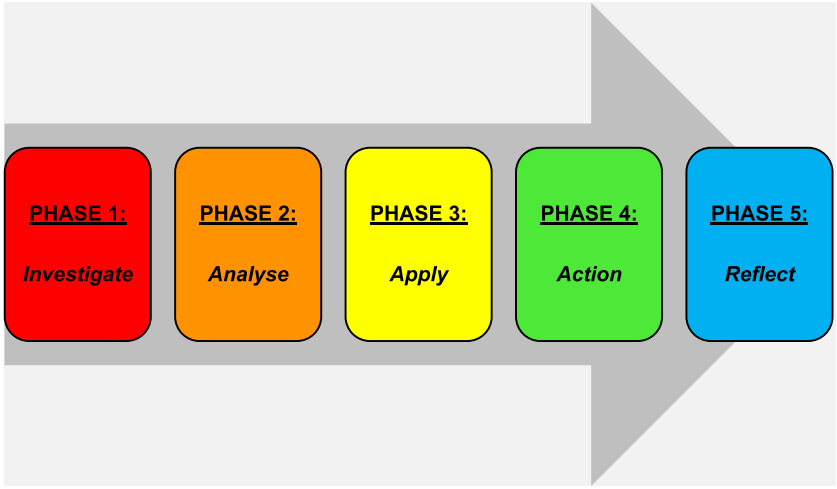

Fig 2. A conceptual model for implementing a SLCP (source: author).

a platform (i.e., WhatsApp) where they can communicate for the duration of their project and to appoint a group leader. Individual students then present their potential community partners to their fellow group members. As a group, they are then tasked to identify one community partner to engage with for their SLCP. This is normally done by means of a voting system.

During step two, students make contact with their chosen community partner to introduce themselves, their project requirements and to start building on what is aimed to be, a long-standing relationship between the community partner and the group of students. Throughout the conversations with the community partner, the students have to identify specific needs that the community partner might have and which they can assist with. Based on the needs, a suitable service provider is identified and consulted with by the group of students to assist them in fulfilling the need(s) of the community partner.

Examples of service providers may include any organisation that is willing to assist the group of students in fulfilling the need(s) of the community partner. The service provider is identified based on the need of the community partner which is also in keeping with the expertise of the service provider. In other words, if there is a need for assisting members of the community to find employment, a potential service provider could be an organisation that specialises in writing resumés. In this example, a workshop can be planned to teach the members of the community how to draft a resumé. Another example may include healthcare professionals who are knowledgeable on self-breast-examinations with the notion of conducting breast cancer awareness programmes.

Phase 2: Analyse

Phase two entails a situation analysis whereby the students need to analyse both the internal- and external environments associated with their SLCP. The analysis is performed by identifying various strengths, weaknesses, opportunities and threats (also known as a SWOT analysis) associated with their project. A SWOT analysis is a strategic management technique designed to help identify the strengths, weaknesses, opportunities and threats related to project planning [12]. The strengths and weaknesses are drawn from one's internal environment. In view of the SLCP, it refers to the strengths and weaknesses of the group members. The external environment, on the other hand, is driven by the possible opportunities and threats, outside of the group dynamic. Only after performing the SWOT analysis, can the students advance to the next phase of the conceptual model. Should the SWOT analysis yield evidence of the project not being viable, the students are allowed to return to phase one and to identify a new community partner and service provider.

Phase 3: Apply

Phase three includes two steps. The first step calls for each student group to now establish a title for their project and to set their overall project goal and objectives. The overall goal of the project is aimed at and worded such that the students verbalise what they are doing and how they are going to do it. In order to achieve the overall goal, there is a need to set both short term objectives (to be achieved daily/ weekly) and long term objectives (to be achieved monthly/ quarterly). The short- and long term objectives provide a sense of direction, purpose and meaning to the projects. I also refer to them as the "action steps" needed to be taken.

During step two, alternative courses of action for achieving the overall goal and objectives are identified. This is done in anticipation of the group experiencing any challenges whilst implementing their projects. The alternative courses of action, in context of the SLCP, are developed from the previously identified, weaknesses and threats of the SWOT analysis (stemming from both the internal- and external environments). Whilst the projects are carried out, the students are to evaluate these alternative courses of actions, should the need arise for them to implement one or more of these steps.

Table 1
My feelings associated with each phase of the conceptual model (source: author).

Phase(s)	My feelings
Phase 1: Investigate	I incorporated the colour red for this critical phase. I found that SL is a brand new concept for the majority of students in my class, and that they have many questions. Based on this, phase one must be facilitated with the utmost of care, consideration and confidence.
Phase 2: Analyse	I used the colour orange for phase two. The students have now had time to reflect on their SL projects with a better understanding and they also had the opportunity to ask questions and engage with their chosen community partner and service provider(s). Therefore, the colour was changed from red to orange, as the students are now, slowly moving forward, in hope of exiting this critical phase.
Phase 3: Apply	Phase three is represented in yellow. Similarly, as per the change of colour from red (phase one) to orange (phase two), the students have now grown more confident in their understanding of what is required for a SLCP.
Phase 4: Action	Phase four can be identified by the green colour. The students are now in what I like to refer to as a "safe zone", ready to implement their projects. What a relief. They now have a clear mental picture of what needs to be done. The students are also aware of what needs to happen, should they experience any challenges along the way.
Phase 5: Reflect	I have decided to use the colour blue to represent this final phase as it brings about a sense of calm and achievement. I also envision phase five with the blue colour, where the students and community partners can now look at both their overall SL experience, from a bird's eye view.

Phase 4: Action

The students are now, officially, no longer in the critical phase of their SL journey. During phase four, an action plan is developed by means of a proposed schedule (timeline of events) and also, a proposed financial budget (anticipated income and expenses). The information presented in an action plan should be able to answer the following: a) what needs to be done (short- and long term objectives), b) how it will be done (a proposed schedule and -budget), c) who will be doing it (i.e., which members of the group), d) when it will be done (due dates) and e) where it will be done (at the location of the community partner/ university campus/ an online platform, etc.). As soon as the action plan has been developed, it is provisionally approved by me, the relevant stakeholders are informed, and the MoU is signed. The students may now, continue towards the implementation of their SLCPs.

Phase 5: Reflect

Phase five is the last step of the students' SL journey. During this phase, I task the students to collect and organise all the evidence of their projects. This is to showcase the completion of their projects. The evidence generally include photographs and videos taken during site visits and on the day of the final event of their projects, field notes such as the minutes of the meetings they held, records/ logs pertaining to when they visited their community partners, evidence of communication with their community partners and service providers as well as evidence of their individual group discussions. Important to note when the students submit their evidence is that the faces of the community members on the photographs/ videos be covered to protect their identity. Furthermore, each student group is also tasked to obtain a written reflection from the community partner they engaged with. This can be in the form of a letter, email or instant message.

2. Feelings

I started working as a fulltime educator in January 2021. SL for me, was a brand new concept of which I had limited knowledge and experience. By having accepted this role I felt rather nervous and wondered if I was capable of making a success out of it. I feel that being a part of the professional development of a student is such an important role, and even more so when assisting a student to realise his/ her critical role in the community at large. I incorporated a different colour in each phase of my conceptual model. The colours were carefully selected, based on my feelings associated with each phase. Table 1 provides a brief overview of my feelings associated with the different phases of my conceptual model.

I have found that groupwork is often critiqued by students in general, and not all members of the group participate equally. This also, was a challenge and required me to really step in and become more involved with the group dynamics. For example, there were instances where I had to join some of the individual WhatsApp groups to assist. After the group challenges were resolved, I then removed myself from the group to allow the students to continue with their projects. Although I "removed" myself, I still kept a close eye on what was happening.

As a facilitator, I was able to witness, first-hand, the students' interactions with the community partners and service providers. From a mental health perspective, I witnessed a whirlwind of emotions raging through the students, from start to finish. Community members shared with us, their life stories. For some students, the stories that were shared, triggered emotional responses. It is therefore imperative that support mechanisms be in place for students who experience distress. At the university where I teach, provision was made with the Student Counselling Department. It is often easy for us to make assumptions about our surroundings, but when we get to experience it first-hand, it may change one's perspective significantly.

3. Evaluation

There were many challenges. The biggest challenge included fighting the coronavirus pandemic whilst still having to visit the various communities. Following this, some of the areas that I visited, were also not of the safest to be in. The majority of communities that are in need of help, are often located in crime-ridden areas. Students often engaged with their commu-

nity partners and service providers after-hours, and when facilitating multiple projects at the same time, this proved to be a challenge for me as I was unable to attend all the of the meetings and events that were scheduled. Financial pressure on the students also seemed to be a challenge (i.e., having access to devices such as computers, also internet expenses, transportation to and from the various community partners, etc.).

In view of the students' academic performance, I use three different assessment methods. These methods include: 1) a written group assignment, 2) an oral group presentation and 3) an individual reflective report by using the same Gibbs Reflective Cycle [11]. The assessments are designed to achieve specific outcomes, in context of the theoretical content being taught and also for the students to reflect on their role as aspiring healthcare professionals in the community at large. Combined, I am of the opinion that the three assessment methods work well, especially so, the individual reflective report. From having assessed previous students' individual reflective reports, I witnessed a transformation in their way of thinking.

It is therefore safe to assume that this realisation is in keeping with a curriculum aimed at producing socially responsive graduates. This provided me with a sense of relief and accomplishment, not only having attempted something brand new, but for having facilitated multiple projects and by witnessing this transformation in my students' way of thinking and behaviour. The impact of our projects landed us a faculty award for outstanding community projects at the end of the academic year in 2021.

4. Analysis

By making sense of my experience, I have decided to comment on the teaching and learning strategies that I use. In my personal opinion, one's method of teaching is critical, and directly influences student success. The key to successful learning, furthermore, requires innovative teaching strategies, and especially so, during SL.

I make use of various teaching and learning strategies, under an umbrella concept known as: student-centred learning. Student-centred learning can be explained whereby a shift is created from the traditional teacher-centred instruction method, with almost no room for students to engage, to awarding students with an opportunity to empower and co-create their own learning experience [13]. In this manner, the students are placed at the core of their learning experience and as active participants thereof. This type of learning is my preferred style as an educator as it allows for so many different types of teaching- and learning strategies.

In context of the SLCP, I mainly make use of the inquiry-based, project-based and flipped classroom learning strategies [14–18]. I have incorporated these three strategies into my conceptual model as described during phases one to five. The aim of inquiry-based learning (IBL) is for the educator to create a learning environment for his/ her students through discovery. I incorporated this by giving the students an opportunity to identify and engage with a community partner that is of interest to them. IBL is used widely and in different contexts, including health sciences [14].

Project-based learning (PBL) can be defined as an active teaching and learning strategy, promoting the maximum involvement of students throughout their learning journeys. Students are encouraged to investigate and respond to the challenges faced whilst completing a group project, similar to that of the SLCP. By responding to the challenges, students acquire and demonstrate the following skills: critical thinking, problem-solving and decision-making [15].

The third learning strategy that I use, known as a flipped classroom, is where I implement regular progress meetings. I allocate time on the year planner whereby the student groups take complete control and invite me for meetings to present their project ideas and progress. In doing so, the students are expected to draft a meeting agenda consisting of pre-identified talking points and also, to take minutes of the meeting as part of the evidence for their projects. In this way, students are well-prepared for their meetings and learn from first-hand experience, how to conduct formal meetings. The meetings are chaired/ facilitated by the students themselves. I believe this form of practice assists with preparing students for possible managerial activities in the future, which is also in keeping with the subject content and outcomes. By incorporating the flipped classroom strategy, students take control of their own learning experience by applying and showcasing what they have learned during real-life applications and in-class activities. By using this strategy, active learning is also promoted and takes place whilst the educator engages with the students. This form of practice is known as the flipped classroom approach [19].

5. Conclusion

In conclusion, I have learnt that by putting forward consistent effort, you can accomplish what you have set out to do in the beginning. As an educator, I would also like to stress the importance of adopting a hands-on approach when facilitating similar projects. This requires being directly involved in the projects and by supporting the students when meetings are scheduled with their community partners and service providers.

As an educator, I can also improve the facilitation process by means of implementing the following: 1) creating an "info-pack" for the students that can now include my conceptual model along with other, useful resources pertaining to SL, 2) invite those students whom have already completed a SLCP to share their experiences with the current students during their investigation phase, 3) continuously evaluate my approach towards and my facilitation of SL by getting feedback from the students, 4) laying down ground rules for the students, especially when it comes to working together in a group, 5) have the students keep a reflective journal throughout their SLCP and incorporate this as a potential assessment method and 6) carefully and critically assess the areas in which the community partners are located for safety reasons, prior to approving and implementing the projects.

6. Action plan

I am confident that I can use the conceptual model as presented when facilitating future SLCPs. However, I deem it necessary to also obtain input from the students themselves; based on their lived experiences after having completed a SLCP. This will allow for a holistic view of the SL instruction and assessment methods applied by giving a voice to both the educator and the students. This can be done by conducting interviews with the students. Based on this understanding, changes can be made to the curriculum to ensure that we are in fact, as educators and facilitators of SL, contributing towards the development of socially responsive healthcare graduates.

Conclusion and recommendations

This paper contributes to the body of knowledge by having introduced a new conceptual model for implementing a SLCP. The model was developed, described and explained by the author of this paper, based on his personal reflections. It is argued that this paper can be transferred to other undergraduate curricula focussed on producing socially responsive healthcare professionals. After having completed a SLCP, students seem to have an adequate understanding of the socio-economic challenges of the members in their communities and how it impacts the overall health and wellness of the community members. In return, this understanding is thought to allow for improved patient care practices in the clinical environment. A need for future research, however, exists. This is to ascertain the reflections of those students who have completed a SLCP.

Limitations

This paper is based on the reflections of a single educator. It is therefore advised that educators wanting to adopt the proposed conceptual model, also investigate other papers published on the same topic for guidance. Student reflections are deemed necessary for future research endeavours.

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