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WORKPLACE LEARNING

THE CLINICAL TEACHER

Equipping medical students for ward round learning

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Abstract

Background: While ward rounds offer a rich opportunity for learning, the environment is chaotic, and medical students can struggle to maximise this potential. Few studies have focused on the best way to equip students for ward round learning. One proposed tool developed to orient students' learning on the ward round is called the Seek, Target, Inspect and reflect, Closure and clerk (STIC) model. This study examines the effect of using this model on the student experience of ward round learning.

Methods: Seven medical students with clinical attachments on medical wards in two rural hospitals in New South Wales, Australia, participated in three sequential focus groups over an 8-week period. Students were asked about learning practices on ward rounds, what factors influenced their learning and how using the STIC model impacted on their experience. Thematic analysis was applied to focus group transcripts.

Findings: Students valued learning opportunities from ward rounds but felt the learning potential was largely dependent on the team to which they were attached. Students reported the STIC model promoted greater agency and enabled them to be more self-directed and able to negotiate the chaotic context. Students also valued the focus group discussions about their learning as an avenue to share and better understand their experiences of learning on ward rounds.

Conclusion: Student experience of ward rounds can be influenced via (1) structured learning tools (STIC model) to better orient students and (2) facilitated discussions with peers to assist in developing skills of negotiating and directing one's own learning. Both should be more explicitly integrated in medical curricula.

1 | BACKGROUND

Ward rounds are a daily activity where clinicians involved in a patient's care gather to discuss that patient's illness and management.[1] They occur in complex clinical contexts with competing work demands and limited resources.[1] Ward rounds have been described as 'pedagogically rich',[2] partly because they afford students an opportunity to learn in a landscape of practice as described by Wenger[3] and because they allow access to otherwise inaccessible healthcare knowledge. Ward rounds are part of the fabric of hospital medicine worldwide. They are often a source of informal and formal teaching and are a cornerstone of learning clinical medicine.[4]

The assumption behind student learning from ward rounds is that they have sufficient agency and self-direction to identify what they should attend to and how to make sense of the discussion held by

more senior colleagues about patient care. This prioritising work must also occur on a background of hierarchy where expectations about their involvement may vary depending on the preferences, experiences and skill set of the clinicians leading the ward round.[5] The important role agency and self-direction can play in student learning in this context have been underrepresented in educational research. The need for students to be self-directed and lifelong learners is a key goal of medical education.[6]

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Learning on ward rounds can be chaotic, challenging and inefficient for medical students. While there has been an emphasis on improving teaching techniques and fostering a more inclusive teaching culture to address this problem, little attention has been paid to facilitating student agency and self-direction in the same context. The potential benefit of focusing on the latter is less reliance on individual nuances of clinicians in optimising learning in a task which occupies significant curricula time.

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While there has been the development of 'scaffolds' to help drive self-directed student learning in the clinical environment, none are specific to structuring ward round learning.[7–9] The STIC model was originally developed as a structured tool for paediatric consultants or attending physicians to incorporate education into the ward round and has been deemed useful from both the educator and trainee perspective.[10] A further iteration of this model has been developed as a tool for students with the aim of facilitating learning on ward rounds (Table 1). The aim of this study was to understand the student experience of using such a tool including its effect on their experience of ward round learning.

TABLE 1 The STIC model framework proposed to assist student learning on ward rounds

Date of Ward Round:	
STIC—What does it stand for?	**Focus areas for your involvement**
S – SEEK 1. Seek to understand the agenda	• How does the team manage the ward round? • How are they setting priorities? • What are the team expectations of you?
2. Seek to understand team roles	• Who does what on the team? • What role can you fill? • Are you part of the team? • How can you get yourself more involved?
T – TARGET	• Target your learning by taking charge • Do you know what is wrong with the patients? How could you find out? • Are you hearing things you need to find out more about? • How does what you are seeing relate to things you have previously learnt? • Share what you have learnt with your peers
I – INSPECT and REFLECT	• Observe and reflect on clinical encounters • Focus on 1–2 things only for each patient • Do not limit yourself to clinical knowledge • Areas include clinical, communication, team interaction
C – CLOSURE and CLERK 1. Closure	After every round • Clarify anything • Think about what you learnt – where/how are you storing that information? • How does it add to what you already know? • What do you need to consolidate?
2. Clerk	• Think about what to do after the round • There is a lot to take in on each round • Go back and carry out the administrative tasks related to the patients on your team. Did you miss any information on the ward round?

2 | METHOD

In accordance with the aims to better understand students' experiences and interpretations of learning on ward rounds, a qualitative methodology was used.

This research explored the social phenomenon of student learning with a particular focus on whether and how the use of a structured learning tool influenced their approach to learning. Two methodological paradigms informed this research. The first was critical realism, based on the work of Bhaskar,[11] which accommodates positivist and constructivist perspectives simultaneously. Critical realism appreciates that individuals can have agency and affect change; however, this occurs within the constraints of structural elements that are often hidden and more resistant to change.

An important tenet of critical realism is the stratification of 'what is real' into a model with three domains. The 'real' domain refers to structures both known and unknown which exist and either enable or constrain. Relevant to learning on ward rounds, such structures might include time pressures, patient load, consultant and other staff members attitudes to teaching or even the physical dimensions of the hospital ward accommodating assembly at the patient's bedside.[12] The 'actual' domain describes actions (or inaction) and events (or non-events) by individuals—in this case to teach and learn within the ward round environment. A consultant supervising a student examination of a patient and a student attending a ward round asking a consultant to explain a patient's ECG are examples of actions that exist in the actual domain.

The 'empirical' domain is mediated by human experience and interpretation, in this case the experience of students when learning on ward rounds. Regardless of the real and actual domains at play, the empirical domain is the subjective experience of the student and whether they interpret what is occurring as a good or poor learning experience. The domains of critical realism provided a useful paradigm to understand the 'reality' of learning in a dynamic environment or 'open' system[13] which means the student experience of learning is unpredictable and based on subjective interpretations. Critical realism helps describe and understand the rich, diverse and interconnected mechanisms and interactions which influence student learning on ward rounds.

The second methodological influence on this study was action research. Action research methods provide a way of including research participants as active co-researchers[14] in the research process.[15] Action research empowers participants to construct, use and evaluate their own knowledge and understanding[16,17] and thus was chosen for its potential to encourage student agency and self-direction. To achieve this, data were collected through a series of three sequential focus groups which all participants were invited to attend, allowing ideas to be built on over time.

See Figure 1 for study recruitment and design. Ethics approval was obtained from the University of Sydney Human Research Ethics Committee (Approval No. 2018/826). Focus groups were audio-recorded, transcribed and de-identified. Data were open coded (JC and EW independently), and a codebook prepared (codebook verified against transcripts by EW and CD). Themes were developed from the codebook (JC and EW independently). Thematic memos were prepared, and themes were debated between JC, EW, CD and AG until consensus was reached. This use of thematic analysis identified general themes about learning on ward rounds both with and without the STIC model.

3 | FINDINGS

One female and six male medical students from two rural campuses participated in the study between March and May of 2019 (see Figure 1). Five of the seven students were fourth year students, four of whom had previously undertaken medical terms at urban centres.

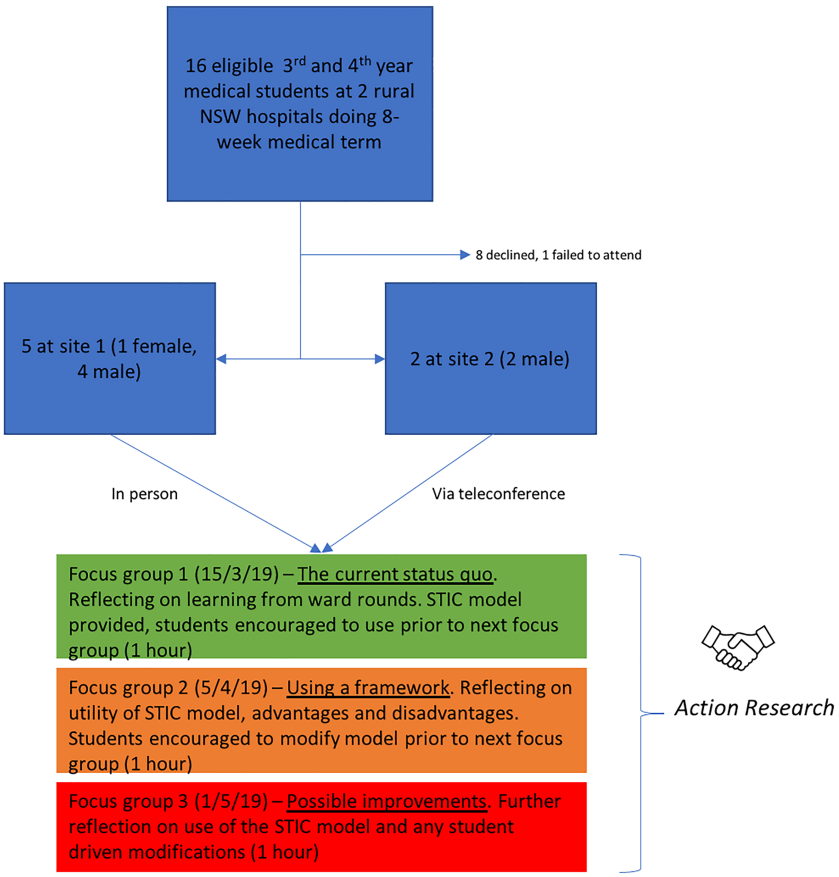

FIGURE 1 Recruitment and study design

3.1 | THEME 1: WARD ROUNDS—SO MUCH POTENTIAL FOR LEARNING

This theme recognised the potential learning benefits of ward rounds. Students discussed how learning from ward rounds made intuitive sense, and they could appreciate the reason ward rounds were part of the curriculum. Table 2 outlines supportive quotes.

3.2 | THEME 2: THE REALITY OF LEARNING—THE INFLUENCE OF THE TEAM

Behaviours such as the way the team include the student and how the team teach and question within a time limited context were significant factors in a student labelling a ward round experience as 'good' or 'bad'. Students described specific features of team behaviours including individual (usually consultant or attending physician) behaviours which they found to impact on their learning. Consultant behaviour was a crucial factor in achieving the potential learning opportunities described above. Students focused on whether and how the clinical team positively or negatively influenced ward round learning. Students equated lack of team involvement and lack of teaching as a poor ward round learning experience. When this occurred, students reported they 'switched off' their engagement to the learning potential of the ward round.

TABLE 2 Themes from qualitative data on student ward round learning with supportive quotes

Theme	Quotes
So much potential for learning	"ICU ward rounds and the learning potential is spectacular. Every single patient gets an examination. Their investigations get reviewed and then the case gets reviewed. They are fantastic learning experiences" FG1, Line 224, P4
The reality of learning	"I guess that the recipe for ward rounds, at least for me to be useful is so many things have to go right that if any of them do not […] you just get nothing from it." FG1, Line 88, P4 "You can tell in the first few minutes sometimes whether this is going to be a good ward round or not" FG1, Line 578, P3
The STIC model—It's a start	"I think that it [the STIC model] just makes the most of what you are getting, I guess. It's like if you know it's going to be a bad ward round, then you go 'what are my learning points that I'm going to take out of this?' So you do get something out of it" FG2, Line 540, P6 "But the idea of a model and learning objectives, self-directed ones, that made those [bad] days feel better" FG2, Line 548, P1
Benefit of critical reflection in learning	"I do think I've been more engaged in ward rounds just after sitting down and having a conversation about how to get the most out of ward rounds" FG2, Line 395, P3 "I think the best thing about this process is we have all sat down and thought about how we learn best, and I think that's what you'd get out of looking at a few different models and trying a few and thinking that works for me, that does not." FG3, Line 586, P3

3.3 | THEME 3: THE STIC MODEL—IT'S A START

This theme related to the usefulness and limitations of the STIC model. Students described the STIC model as providing an orientation to what they could pay attention to and which gave them a sense of control or agency over a learning phenomenon that was otherwise unstructured and somewhat chaotic. This structured guide was particularly relevant when students predicted that the ward round was going to be 'bad' in the sense that learning opportunities provided by the team were predicted to be scarce, as described in the previous theme.

3.4 | THEME 4: BENEFIT OF CRITICAL REFLECTION ON LEARNING

Despite the variable utility of the STIC model as reported by the students, an overriding effect of using the model was that it prompted critical reflection of ward round learning. By participating in the research, students were able to reflect on their own approach to learning and share ways to enhance learning on ward rounds, allowing them to orient themselves and be oriented to their learning.

4 | DISCUSSION

This study provides a unique insight into students' perceptions and experiences of ward rounds as a learning event. It also evaluates how a structured scaffold, the STIC model, influenced their learning experiences. The results show that students could appreciate the potential for learning that ward rounds provided. Learning from real patients, being included as a team member and seeing senior colleagues reason were cited as beneficial learning opportunities and are examples of 'pedagogically rich' activities.[2] Students identified that such rich learning opportunities could be soured by not having a defined role in the learning experience, feeling disempowered to contribute or feeling on the 'outer' within the team. Conversely, students felt learning was maximised when they were included by the consultant or attending physician and their team. These findings resonate strongly with the well-known concept proposed by Wenger regarding the learning significance of the community of practice and legitimate peripheral participation.[3,18]

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From a critical realist perspective, the community of practice and the large number of factors which contribute to whether it is a supportive community or not (time pressure and consultant attitudes) are the 'real' layer enabling or constraining learning for students. Prior to intervention with the STIC model, students either engaged with the community and learnt, or disengaged and switched off from learning. Drawing from the realist domains, students were strongly influenced by the empirical domain and made decisions based on their perceived experience. According to the students' experiences, the 'real' domain of external attitudes and ward round group dynamics had the power to shut down learning due to the actual constraints they imposed. Students discussed how they tried to mediate some of their actions, which exist in the actual domain, to facilitate learning, but the effect and their efforts were inconsistent, experimental and often developed through trial and error.

The second key finding was to highlight the potential pedagogical value of a structured orienting tool, in this case, the STIC model. Use of this tool provided a means for students to gain some control over their learning, particularly when they felt disempowered. In the absence of an enabling community of practice, the tool seemed to work to orient students to identify and try alternative ways they could maximise their own learning from clinical activity—transforming a chaotic series of events into a more focused learning scenario. Gaining this agency lay in the 'actual' domain, where students could act to bypass the negative effects of an unsupportive community. Although the 'real' domain still had its constraining effect, the STIC model allowed individuals to affect change on their learning experience.

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Several studies have looked at techniques for teams to include students and to teach them more effectively in ward round contexts. These include utilising near peer teaching,[19] creating space for the student on ward rounds[20] and clinician use of the STIC model to help make teaching on ward rounds more structured and efficient.[10] These approaches have focused largely on the role and actions of the teacher to optimise the learning environment for the student. Less has been studied about the role and actions of the student and how to promote student agency and self-direction in a ward-based setting from the student perspective.

In this research, we found the STIC model to be a useful trigger for structured attention for the students. We also found that the experience of participating in the research triggered student movement from unreflective attendance at ward rounds, to thinking about what they were learning on ward rounds and better understanding their own reactions and processes of learning. By being asked to share their experiences, students became more aware of the empirical, actual and real domains influencing not only their own, but also their peers' learning. As a result, students became more invested in their own learning.

Participating in the research triggered student movement from unreflective attendance at ward rounds, to thinking about what they were learning on ward rounds.

Critical reflection in education supports learners to make sense and meaning and adjust knowledge.[15] Its importance in medical education has been well described, as it maximises deep and lifelong learning.[21] The research facilitated students sharing their own experience of learning on ward rounds with their peers. The concept of 'learning through talking' exists predominantly in relation to language and classroom learning[22–24] and was both a useful and positive contribution to enhancing self-awareness in this study.

The use of a framework for students as well as a space for reflection about ward round learning had significant educational impact on the students in this study. Learning prompts and structures which orient learning and reflection to increase self-awareness are well recognised learning strategies[9,25] but have not been applied to ward round learning. Student focused interventions such as the ones studied in this research can lead to superior student learning experiences and need to be considered in medical school curricula design.

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TABLE 3 Findings of research and pedagogical implications

Finding	Pedagogical implication
Positive learning experiences occur on ward rounds	Ward rounds remain a pedagogically rich learning activity[2]
Team behaviour heavily influences the learning experience of students	The educational role of participation and learning within communities of practice should ideally underpin ward round behaviours across the whole team[18]
STIC model helps student learn by promoting agency	Learning tools which orient students to learning opportunities can assist to engage students and highlight educational potential[10]
Model was used differently by students and modified in different ways	Allowing students to modify a learning tool affords agency and recognises important principles of self-regulation[26]
Facilitated discussion group allowed reflection on learning, peer–peer learning and orientation to ward round learning	There is pedagogical value in providing space for student discussion and reflection. It enhances student agency and promotes critical thinking[15]

Table 3 summarises the pedagogical implications derived from the findings of this study. The study results highlight that improving ways of teaching and student inclusion during ward rounds need to continue to evolve in parallel with approaches which help students drive their own learning in the same setting. Neither should be neglected when considering curricula design.

This small qualitative study was conducted across two rural sites where medical students were attached to general medical teams. The findings cannot be directly generalised to urban sites or other hospital settings, including sub-speciality medical teams. The obvious gender imbalance between participants also limits generalisability. However, the research findings improve our understanding about student experiences of learning on ward rounds that may be relevant to other settings. Further research investigating this in other settings is crucial if we are to further unlock the learning potential from ward rounds.

5 | CONCLUSION

Helping medical students maximise learning from ward rounds is relevant worldwide. This small, rurally based study demonstrated individual modification of the STIC tool combined with peer reflection enhanced student agency when learning on ward rounds. Introduced into curricula and applied more broadly, this simple strategy could make a small but important difference to student learning in medicine. Further research in this area should focus on implementation strategies and evaluating their effectiveness in both the rural and urban setting.

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CONFLICT OF INTEREST

The authors declare no conflict of interest exists.

ETHICS STATEMENT

Ethics approval was obtained from the University of Sydney Human Research Ethics Committee (Approval No. 2018/826).

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