



## The emerging professional: Early clinical students' views about their learning environment

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### ABSTRACT

**Introduction:** The clinical learning environment is a dynamic and demanding educational setting. Medical students go through a series of developmental shifts and need to adapt to the challenges of clinical reasoning and learning. **Objective:** To establish how medical students could be better supported through the transition to the clinical years and what changes need to be made for more supportive clinical learning environments. **Method:** Students in early clinical training were asked to discuss and derive through consensual dialogue issues that need to be addressed and/or changed in reference to their clinical learning experiences. Themes were determined through focus group deliberation using the small group instructional diagnostic process. **Result:** There is strong evidence, from this group of students, of an emergence of professionalism as student go from years four to five. Year four students requested more student-centered assistance and scaffolding as learners, while year five students appear to be seeking more independent and professionally applicable learning experiences. **Conclusion:** Deriving consensus-driven ideas from students is a potent system for gaining insights into the needs of students within the clinical setting. These ideas can be instructive for educationalists in enabling more supportive learning environments.

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## Introduction

The clinical component of the undergraduate medical curriculum has multiple layers that include: teaching, clinical practice, involvement with multi- and inter-disciplinary teams and patient care. There are inevitable challenges and tension between these factors in terms of time commitments and resourcing [1]. It is crucial to consider the viewpoints of each stakeholder in the process of teaching especially when the stakes are very high. It is also important to consider the contextual uniqueness of each learning environment and the impact this has on students in their early exposure to clinical training [2].

Exposure to actual patients in a clinical environment is a topical area for discussion. Dornan and colleagues [3] asserted that early experience in primary care, and the experience of dealing with actual patients, can provide positive learning experiences and assist in the development of empathy. The experience also enables students to be more self-aware, builds their confidence and facilitates communication competencies. Furthermore, the process of integration between clinical knowledge and clinical experience creates a motivational model for learning. To deepen this level of understanding the power of writing down what has been seen has been investigated using logs in terms of integrating both subjective and objective reflections [4]. There is, thus, ample evidence to support the value of the clinical environment and also a voluminous amount of literature addressing the development of clinical teaching [1, 5-7]. What is further required are diverse methodologies and information about contextually specific learning environments.

The University of Auckland has a six year undergraduate medical course, consisting of three years of basic science followed by three years of clinical teaching. The sixth and final year of the course is a pre-intern year where students are supervised and work as a first year intern [8]. A recent evaluation of this year suggests that it is more effective than other pre-intern placements elsewhere in preparing

students for clinical practice [9]. The present study conducted two focus groups to explore and gain an understanding in relation to students' views about their clinical learning environment in their first two clinical years (fourth and fifth years).

The research team decided to ask students directly about their clinical training experiences and to consider aspects of the curriculum that needed to be addressed or changed. The system of collecting students' views in this study is different to the more formal systems using self-report questionnaires, such as the DREEM [10], which may be conceived as teacher-centered mechanisms as opposed a learner-centered approach [2]. A learner-centered approach that aims to promote discussion that culminates in a group consensus is the Small Group Instructional Diagnosis system. This system is used for gathering student feedback with the goal of improving teaching and learning, and entails small group discussions that lead into a 'whole-class interviewing technique' [11, 12]. This is a new process that has not been trialed with medical students previously but was considered useful as it allows learners to create their list of important criteria unimpeded by external influence [11].

The present research team expected that students in their first two clinical years are learning in a stimulating and supportive environment but further information would be valuable in planning for the future curriculum [13]. Consequently, the purpose of this paper was to provide the platform for medical students who are actually engaged in the learning environment, to define and prioritize changes they considered would enhance their learning.

## Method

### Participants

Two focus groups were organized: a fourth year (6 students) and fifth year group (16 students). These students were selected (from a total of 343 students) through engaging critical personnel such as the students' representatives using a linear snowball sampling method [14] and,

additionally, all students were informed that these focus groups were going to take place and invited to participate via their student internet accounts. Nonetheless, it was recognized that these focus groups would not necessarily be representative of the larger group given the self selection process and smaller numbers.

#### Procedure

First, ethics approval from The University of Auckland Human Participant Ethics Committee was acquired before the study commenced. Next, both fourth and fifth year students were notified and invited to participate in the forthcoming focus groups.

A focus group room was arranged independent of the primary researchers and medical educators. An independent researcher and assistant attended and organized the focus group discussion. The methodological process used to structure the group meeting was centered on the idea of Small Group Instructional Diagnosis [15].

During the sessions, a sequential system [15] was implemented. With respect to the fifth year group, students were asked to write a list of significant issues that needed to be addressed or changed by faculty (preferably no more than 5). The students subsequently worked in pairs and generated a consensus driven set of 5 important issues, which were written down by students. This process was repeated in a larger group (of 4 students) and finally the whole group (of 16 students) chose, through a consensus driven discussion, the most significant ideas that needed to be addressed or changed by faculty.

A similar approach was incorporated for the fourth year group but as only six students attended this session, students were first asked to write down their own ideas after which a whole group discussion ensued. A list of eight ideas were generated and recorded.

The responses from both focus groups were written down by the same research assistant on two separate occasions and checked for accuracy immediately after each session by the other two researchers present at the meeting.

#### Analysis

The responses from the focus groups were collated by the first author and the two research assistants present at both focus group sessions. These comments were framed in terms of the students' consensus-driven themes using Small Group Instructional Diagnosis [16].

#### Result

The fifth year student commentaries shown in Table 1 suggest that teaching medicine through practice-based systems is the most sought-after request. This may be in the form of case- or problem-based teaching and learning, or from the actual bedside. Moreover, these students voiced that this kind of teaching and learning is important in earlier years. Second, the themes of consistency across assessments, creating learning objectives, the need for more self-directed time for study were consensually voiced by these fifth year students.

Table 1

Research assistant notes of the students' focus group: Fifth year students (n = 16)

Areas that need to be addressed or changed

1. More formal clinical skills teaching after 3<sup>rd</sup> year

Importance of standardization

- Learning 5 different ways of doing the same thing
- For examination purposes we need to know the set way of doing things
- Some doctors don't teach certain things if they don't want to
- What about a video of what's important/what's not important?

Some important skills aren't taught

- E.g., how do you make a diagnosis based on taking a history?

2. Case-based teaching in the pre-clinical years

- Need case-based teaching – not (just) fact-based

3. Consistency in assessment in clinical years

- Clinical grades are arbitrary – these seem to be based on doctors' personal preferences.
- Even the score sheets aren't accurate
- Consultant doesn't spend enough time with you.
- Over-assessment – marked for every half day attended.

4. Specific objectives for each separate rotation

- Clear understanding of what you must know for each run to help focus your studies
- Booklet you can work through which covers core topics for each rotation – cases, differential diagnoses.

5. Time off for self-directed study during the rotation

- Insufficient time to prepare for examinations

Commentaries made by fourth year students (Table 2) were related to a diverse set of issues such as: (1) removal, amendments and additions of some clinical rotations; (2) the need for clinical mentors; (3) clarity about roles when on clinical placement; (4) the need for more

coordination/organization and a Student Orientation Manual; (5) less professional development in years two and three; (6) more online quizzes; and (7) the need for 24-hour access to computer labs.

Table 2

Research assistant notes of the students' focus group: Fourth year students (n = 6)

Areas that need to be addressed or changed

1. Decrease two weeks of one clinical rotation and add one week to another.
2. Six weeks is too long with one team especially if the team is specialized.
3. Need for a clinical mentor and someone to ask a question to who has more experience (e.g. Intern or Registrar) – and who is not supervising your run. Students are reluctant to ask too many questions of someone who is assessing their knowledge and marking them.
4. Clarity of roles and expectations for the medical team and student
5. Lack of coordination/organization at present. Need for Student Orientation Manual
6. Less Professional Development [communication skills, ethics, health psychology, lifespan development] in years two and three.
7. Formative online quizzes (Weekly) – just to test knowledge.
8. Swipe card for 24-hour access to computer lab.

The order of importance was directed and developed by both fourth and fifth year students themselves. The present authors felt there is a marked difference between the fourth and fifth year students in terms of the tone, content and description of the commentaries. The fifth year students appeared to be more professionally focused while the fourth year students were more student-focused. These commentaries and their implications will now be discussed in more depth.

## Discussion

The medical students involved in this study, using the Small Group Instructional Diagnosis process [11, 15, 16], generated responses that revealed very specific areas that can be directly related to what they wanted changed and addressed. Also by ranking the importance of each item students provided the present authors with insight into the relative level of importance of each item. This process for collecting feedback about educational programme in the medical faculty was thus considered very constructive and informative.

Some of the areas recorded by the research assistant from the focused discussion that ensued between the fifth year students indicated that they had very specific concerns (Table 1), namely earlier introduction of clinical exposure, more consistency with assessments, clearer objectives, and time off for self-directed study. The findings from this study are in line with international reports that show that early clinical experiences had a positive effect on students' learning with respect to: providing a motivational element, allowing them to familiarize themselves with the clinical environments, developing professional skills, promoting confidence when interacting with patients, developing reflective praxis, instilling a sense of clinical inquiry, and inculcating a sense of identity [2, 3]. It further allows students to develop their communication skills and learn some basic clinical competencies [3, 17]. Moreover, an easily accessible website for students and teachers to clarify objectives and expectations for each rotation at all teaching sites

may be a solution for creating greater consistency across sites and delivering outcomes [18]. Clinical teaching could also be complemented by using multimedia to demonstrate basic clinical skills to further ensure consistency of teaching and learning [18]. It is additionally critical to review assessments to make them more transparent and consistent across teaching sites and to include regular formative assessments (testing knowledge and skills) with feedback to guide learning [1, 19].

In contrast, fourth year students' commentaries (Table 2) tended to be less specific and centered on issues related to changing specific clinical rotations, the need for clinical mentoring, clarity of roles and expectations, more organized resource material, specific test assistive technology and access to the library and computer room. These findings suggest a developmental shift from years 4 to 5. With fourth year students requesting more assistance and scaffolding (or needing greater instructional support mechanisms) as learners, while fifth year students appear to be seeking more independent learning experiences. Furthermore, the fourth year students showed greater diversity in responding; this may indicate a homogenizing effect of medical training in that more advanced students are gaining a clearer idea of what is important as they progress through the training process. A developmental change as students progress through their training, from a sense of student- to professional-identity is consistent with international literature [4, 20-22].

The difference between the fourth and fifth year groups appeared in reference to insufficient experience with the clinical environment. There is a natural developmental process as students move from the science of healing to the actual physician-healer status that encompasses the acquisition of self-knowledge and the enhancement of competencies and abilities and necessary attitudinal adaptations to the clinical context [23]. In this study, fourth year students appeared to be more focused on passing exams and survival in the learning environment while fifth year students were more attentive to attaining professional competency. The cross-

sectional comparison between fourth and fifth year students shows how quickly students adapt to the clinical environment as the focus changes from student survival to clinician-apprentice. This sense of identity formation is something that continues as students move to being active clinicians and face the challenge of professional practice [4, 21].

It is acknowledged that the students in this study may have tentative ideas about what makes a practicing clinician and this leads to a diffuse identity status. Niemi [4] suggested that preclinical students are beginning to achieve a sense of professional identity and are actively exploring alternatives in terms of what constitutes a medical student's role. The preclinical themes provided by Niemi may explain the diverse set of changes suggested by fourth year students as opposed to the more focused clinical changes sought by fifth year students. The educational implications, for this medical school, are that fourth year students may need greater support in terms of academic scaffolding and will certainly require a measured approach to clinical exposure, while fifth year students request more support at a more focused clinical level.

To further improve the learning experiences of students and their access to resources, communication between the universities and clinical teachers may need to be enhanced so that clinical teachers know what students are being taught at the University and what is required at developmentally appropriate levels within the clinical setting in terms of learning outcomes [1]. The student commentaries appear to show that they are interested in their learning development and want to challenge their own learning as well as be challenged by clinicians. It is thus critical for clinical teachers to be aware of their learners' mind and capabilities, and to accurately assess them so that they can be taught using the right communication pitch [7].

It is acknowledged that these commentaries are based on interpretations from cross-cohort data and need to be investigated using longitudinal research designs which measure the change of

perceptions of the same individuals over time. Such an investigation would need to apply a mixed methodologies approach to provide a comprehensive developmental framework of clinical students' views about their learning environment.

## Conclusion

The findings of this study assert that these students place considerable value on the need for practice-based teaching to be integrated with the basic sciences and that this integration needs to occur early in the curriculum. These students are additionally aware of what resources are required to enhance and complement their learning potential. Students' commentaries suggest a rapid shift in competency as they move through their clinical training and this is informative for clinical teachers as they need to carefully monitor and assess the individual needs of students so that the transmission of knowledge resonates with the developmental stage of the student. There is a further need for a nexus between the various components of clinical teaching and learning to allow students to learn and continue to learn towards their learning edge. In line with the continual development of this school's curriculum the authors intend to resurvey these students to monitor the effects of new innovations, using a variety of evaluation techniques.

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